PERSONNEL

March, 1957

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Personnel

The National Journal of Personnel Management

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. . . strictly personnel

Forecast for 1965: Shorter Hours —Or Unemployment?

UNLESS THE ECONOMY increases at a much faster rate than it has done in recent years, employment opportunities by 1965 may fall far short of the number of workers available. If everyone who wants a job is to have one, drastic changes in hours of work will be called for, concludes the Public Affairs Institute in a detailed study of the probable employment picture a decade from now.*

Comparing the growth in the labor force with the rate of increase in productivity, the study predicts that, if current trends continue, there will not be enough 40-hour-week jobs to go round among the 78 million workers in the labor market in 1965 and over 10 per cent of the labor force can expect to be unemployed. To take up the slack, it is estimated, the work week would have to be cut from 40 hours to 36 or, alternatively, annual vacations extended from one week to six.

Though the 40-hour week is still the prevailing pattern in industry, some groups of workers are already on schedules of less than 40 hours. So far, however, there has been no departure from the standard five-day week, and such evidence as is available suggests that it is here to stay. As was pointed out at the AFL-CIO Conference on Shorter Hours of Work held in Washington last September, the unions which have established a standard workweek under 40 hours have done so by gradually shortening the workday rather than cutting the days in the workweek, and any further reductions in hours are likely to take the same form.

In estimating how far the trend toward shorter hours may go, the biggest question mark, oddly enough, is the attitude of labor itself. "There is no evidence from recent experience" observed one speaker at the Conference, "that workers want shorter daily or weekly hours. . . . The most numerous and persistent grievances are disputes over the sharing of overtime work."

On the other hand, the threat of unemployment is likely to revive the share-the-work philosophy. As the Conference noted, the effort to minimize unemployment has been the most important factor in union campaigns for shorter hours—"a more persuasive factor in shaping union attitudes than the appeal of additional daily or weekly leisure or the need for easing work fatigue." With mass unemployment in 1965, the four-day week might indeed become a reality.

* Stephen Raushenbush, *Productivity and Employment: 1955-1965*, The Public Affairs Institute, Washington, D.C., 1956.

Executive Recruitment: Some Pointers for Personnel Staffs

THOUGH FEW, if any, companies would go so far as to decry the gospel of promotion from within, many apparently regard it as something of an impossible ideal. A recent AMA study* among a representative cross-section of member companies found that over

* For a full report on the findings of this study, see Lydia Strong, "Executives Wanted: The Managerial Manhunt," THE MANAGEMENT REVIEW, February, 1957.

half the respondents filled up to 20 per cent of their top and middle management jobs through outside recruitment.

Main reasons for today's "mad market" in executives appear to be company growth and diversification, coupled with the increasing complexity of management—from which it seems safe to prophesy that the problem of too many top jobs and too few top men is not likely to be eased in the immediately foreseeable future. Whichever way business is headed, it is obviously not in the direction of greater simplicity.

Nevertheless, many of the survey's findings suggest that the present scramble is not entirely unavoidable. It is significant, for example, that among the companies studied those carrying on management development activities have a distinctly better record ! filling executive vacancies from within than those who do not have management development programs of any kind. The process of developing a promising executive always, of course, entails some risk that he will be snatched away by a competitor. Yet, despite its snags, management development remains one of the best methods of insuring that, when an executive vacancy does arise, there is someone inside the organization capable of filling it.

When recruitment is inevitable, personnel departments might consider two sources which, the AMA survey shows, are often overlooked: college placement bureaus and unsolicited applications. Some companies, mainly large ones, ranked letters from people who write in to ask about a job as their best outside source. Yet by and large, companies appear to give little serious consideration to applications from out of the blue.

Personnel departments might also, it seems, take a leaf from the book of that postwar phenomenon, the search consultant. As all companies that have enlisted the aid of a professional executive recruiter are aware, his services come high—with no guarantee of success. It is true that the professional consultant is often in a position to solicit men whom the company itself, for one reason or another, is unable to approach directly. Nevertheless, many of his methods—such as maintaining a close watch on trade news and the progress of men in various fields, and the use of advertising, trade associations, and other standard sources of supply—might well be copied by a personnel staff alert to the needs of an expanding organization.

The Personnel Man On the Campus

AMONG CAMPUS RECRUITERS, the personnel man is well in the minority—a recent AMA survey shows that out of 4,231 recruiters only 994 were from the company's personnel department. But despite his comparative sparsity, he seems to be more successful at recruiting than other company representatives. The companies using only personnel men in their campus campaigns netted a median of 73 per cent of their recruitment quotas in 1955-56. For companies using both personnel people and line executives, the median was 68 per cent; and for those using non-personnel people only, 58 per cent.

One reason why personnel men get better results may be simply that they spend more of their time recruiting than do line executives. Another seems to be the fact that a sizable percentage of the personnel men who recruit are hired specifically for the job and presumably possess an innate aptitude for it. Other company representatives may be better able to discuss the details of specific job openings. But they are not necessarily endowed with

the ability to "size up" applicants or put them at their ease—qualities which the overwhelming majority of the respondent companies single out as indispensable in a good interviewer, and ones which can be developed to only a limited degree by training.

If the personnel man enjoys something of a head start by virtue of his native talents, he is not likely to find the going easy, for all that. According to Northwestern University's latest survey of trends in the employment of college graduates,* which was carried out at the end of 1956, 142 of the 200 reporting companies will be seeking more men this year than last. In engineering, chemistry, and physics, quotas are up 35 per cent, and in other fields, 30 per cent. Over half the companies also plan to contact more colleges than in 1956.

An interesting finding of the survey is that though many of the companies raised their starting rates after the 1956 interviewing season began, they fared rather worse than companies that did not raise them. Thus out of 81 companies that upped their starting rates for engineering positions, only 10 managed to meet their target, whereas 20 out of 62 companies that held to their original rates achieved it. In accounting, sales, and general business, though the tendency to raise starting rates was less pronounced, the same pattern prevailed.

The Mounting Office Payroll

TO MOST OFFICE MANAGERS, it will come as no surprise to learn that U.S. office workers are being paid at an all-time high. According to figures released by the National Office Management Association in its eleventh annual survey of clerical office salaries, there was an average rise in the jobs studied of $3 a week in 1956, and the combined salaries now being paid in the seven basic categories—private secretary, telephone operator, typist (senior and junior), transcribing machine operator, and stenographer (senior and junior)—are 67 per cent higher than those of 10 years ago.

Private secretaries now earn 82 per cent more than they did in 1947, and telephone operators, 74 per cent more. The smallest gains over the 10-year period were achieved by stenographers—67 per cent.

On the surface, these figures would appear to be just another example of the inexorable workings of the law of supply and demand. Business, it is often claimed, is simply feeling the pinch of the low birthrate during the depression years; the picture will change when the war babies start trooping into the office in force. Other indications are, however, that even with an expanded pool of clerical workers to draw from, business has little hope of halting the upward trend in office payrolls.

For one thing, the white-collar worker isn't doing quite so well as the NOMA survey suggests. Recent studies by the Bureau of Labor Statistics show, for example, that office pay levels are falling well behind those of the shop. The highest paid women clerical workers—private secretaries—earn only slightly more than stationary boiler firemen. Stenographers' salaries are roughly on a par with those of material handling laborers. And senior typists do about as well as watchmen and janitors.

According to the Bureau, the disappearance of the traditional advantages enjoyed by white-collar workers is due first to the higher percentage of the population wanting to get into office work, and second, to "the low inci-

* Frank S. Endicott, *Trends in the Employment of College and University Graduates in Business and Industry*, 1957. Northwestern University, Evanston, Ill.

dence of unionization among clerical employees." This looks like one piece of ammunition which the AFL-CIO should be able to use to telling effect in its coming drive to bring clerical and professional workers into the union fold.

The Case for the "Free Rider"

EVEN THOSE who object in principle to the idea of compelling a worker to join a union as a condition of holding his job are often in two minds about the "free rider"—the worker who enjoys union representation without being himself a union member. The contention that the nonunion worker profits at the expense of his dues-paying colleagues has, in fact, gained considerable acceptance over the past 20 years.

In a recent study, Dr. Philip D. Bradley, formerly a member of the Department of Economics at Harvard and now a consulting economist, reexamines this contention and questions whether it is sound either in theory or in fact.*

The case against the free rider, Dr. Bradley points out, rests upon the argument that unions create or obtain economic benefits for their members and that these benefits are enjoyed by member and nonmember alike. Hence, in sharing in the benefits of union representation while refusing to share in the costs of acquiring them, the nonmember acts unfairly toward the union member.

Actually, Dr. Bradley avers, no factual evidence exists that collective bargaining has secured economic benefits in excess of those that would have been obtained under individual bargaining. Indeed, he points out, the record abounds in evidence that supports the opposite contention—union demands for economic concessions from employers are frequently based on the claim that the wage rates of the workers they represent have risen less than the rates received by workers in other industries, including some nonunionized industries.

Further, says Dr. Bradley, where a union does have the power to secure benefits for its membership and uses it, while it may thereby benefit some members of the group it may injure others. Thus, where a union succeeds in establishing or maintaining higher rates of pay than would otherwise prevail, the industry concerned will offer fewer jobs than it would at a lower rate, and the higher rate is simply a means of redistributing income in favor of the members who are retained at the expense of those who have to be laid off.

By depriving the worker of the right to decide whether a union benefits him or not, involuntary unionism not only runs counter to our historic freedoms but overlooks the elementary fact that what is good for the group is not necessarily good for the individual, Dr. Bradley concludes. Workers whose economic position conflicts with that of the majority of the bargaining unit may concede the right of the majority to negotiate agreements designed to promote the interests of the majority group. But why, he asks, label them "free riders" simply for refusing to contribute to, or otherwise support, a majority or controlling group which exploits them for its own benefit?

Though Dr. Bradley is able to muster a considerable body of scholarly support for his views, there is no doubt that they will arouse vigorous dissent, both outside as well as inside union circles.

* Philip D. Bradley, *Involuntary Participation in Unionism*, American Enterprise Association, Inc., Washington, D. C., 1956.

. . . Aside from the human problems that inevitably arise when all the interest is engineered out of the job, extreme specialization, the author suggests, may be far less economical than we think.

Job Design and Productivity: A New Approach

LOUIS E. DAVIS

University of California, Berkeley

IT HAS LONG been taken for granted that specialization is the organizing principle of modern industry and the mainspring of its phenomenal productivity. However unfortunate some of the by-products of specialization, they have been accepted by and large as necessary evils. Better to put up with them, it seemed, than to attempt remedies which might impair efficiency and thus jeopardize the material gains of industrialization.

But are these actually the alternatives today? In the light of recent research and experiment, it appears to be high time to re-examine the issue. Has specialization perhaps been carried too far—to the point where productivity is *adversely* affected? Are fatigue, tension, low morale, absenteeism, turnover, and other causes of inefficiency actually the result of over-specialization? Can increases in productivity be achieved by *reversing* the principle of specialization?

Specialization and Job Design

The approach to these questions has always been blocked by the assumption—accepted implicitly by management, engineers, and social scientists alike—that *the content of each job in an organization is fixed by the requirements of the production process and the organization structure* and therefore cannot be altered without jeopardizing economic efficiency.

It is this assumption which has persistently biased the judgment of both experts and laymen and ruled out

NOTE: The author wishes to express his appreciation to Dr. Ralph R. Canter, Systems Development Division, the Rand Corporation, for his collaboration in developing the concepts and supervising the experiments reported in this paper.

the possibility of an objective approach to the problems created by specialization. Engineers and industrial managers have designed jobs on the basis of this assumption, and their concepts and methods of job design, reinforced by the economists', have set the pattern of industrial organization.

In its classical form, then, job design incorporates the principles of specialization, repetitiveness, reduction of skill content, and mimimum impact of the worker on the production process. The basic criteria for job design are minimizing immediate cost and maximizing immediate productivity.

Social philosophers, it is true, have long deplored the dehumanizing effects of this type of job design—monotony, the lack of mental stimulus, rigid adherence to job specifications and standards of output, and, not least, a hierarchical social order in which subordinates depend upon their superiors for the satisfaction of basic needs and aspirations. Whether the worker subjected to such a life experience could ever become a responsible citizen in a free democratic society seemed open to question.

Although the social scientists, beginning with Mayo, were the first to put to the test some of the basic assumptions of industrial society, they too took for granted the critical assumption that job content is fixed by technology, and hence focused their investigations for the most part on *other* aspects of the work situation, leaving job content to be prescribed by the engineer.

More to the point, therefore, are the criticisms being made today of the concept of job design itself.[1]

Drucker has argued, for example, that the use of the worker as a single-purpose machine tool is poor engineering and a waste of human resources. As he states the case:

> The principle of specialization is productive and efficient. But it is very dubious, indeed, whether we yet know how to apply it except to machinery. There is first the question of whether "specialization" as it is understood and practiced today is a socially and individually satisfying way of using human energy and production—a major question of the social order of industrial society.[2]

Or as Walker, even more boldly, has suggested:

> We are only at the threshold of a scientific understanding of man's relation to work and especially his relation to the new technological environments within which much of the work of the modern world is being performed.[3]

It may well be, then, that society has bowed too soon to the expert in accepting the principle of specialization as inviolate. Once the critical assumption of fixed job elements is put to the test, it may prove to be invalid and the traditional concepts of job design may have to be reformed.

It is from this point of view that current trends in job design will be

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[1] See for example, J. C. Worthy, "Organization, Structure and Employee Morale," *American Sociological Review*, Vol. 15, No. 2 (April, 1950), p. 169; C. R. Walker and R. H. Guest, *The Man on the Assembly Line*, Harvard University Press, 1952; F. L. Richardson and C. R. Walker, *Human Relations in an Expanding Company*, Yale University Press, 1948; R. H. Guest, "Men and Machines: An Assembly-Line Worker Looks at His Job," PERSONNEL, Vol. 21, No. 6 (May, 1955), p. 496.

[2] P. F. Drucker, *The New Society*, Harper & Bros., 1950, p. 171.

[3] C. R. Walker, "Work Methods, Working Conditions and Morale," in *Industrial Conflict*, ed. A. Kornhaumer *et al.*, McGraw-Hill, 1954, p. 358.

analyzed in this article and the outlines of a new approach to the problem presented.

Current Approaches to Job Design

Job design[4] is a phase in production planning which follows the planning and design of product, process, and equipment. It specifies the content of each job and determines the distribution of work within the organization.

This simple definition of job design does not take into consideration the many choices open to the job designer in specifying the content of a particular job. Generally speaking, however, the job design process can be divided into three phases:

1. The specification of individual tasks.
2. The specification of the method of performing each task.
3. The combination of individual tasks into specific jobs to be assigned to individuals.

The first and third determine the content of a job while the second indicates how the job is to be performed. It is possible, therefore, to distinguish between the design of *job content*—content design—and the design of job methods—*methods design*. There is a large body of knowledge about methods design—it is the subject of a specialized branch of industrial engineering, called methods engineering[5]—but relatively little information about content design.

According to a recent survey,[6] however, it is the prevailing practice in designing the content of industrial jobs to rely upon the criterion of minimizing immediate costs, as indicated by minimum unit operation time. To satisfy the minimum-cost criterion, the following rules are generally applied:[7]

In specifying the content of individual tasks:

1. Specialize skills.
2. Mimimize skill requirements.
3. Minimize learning time.
4. Equalize workloads and make it possible to assign full workloads.
5. Provide for the workers' satisfaction (no specific criteria for job satisfaction are known to be in use, however).
6. Conform to the layout of equipment or facilities or, where they exist, to union restrictions on work assignments.

In combining individual tasks into specific jobs:

1. Limit the number and variety of tasks in a job.
2. Make the job as repetitive as possible.
3. Minimize training time.

In contrast with this *process-centered approach*, another concept of job design has been developed in recent years—the *worker-centered approach* which emphasizes the participation of the worker in certain areas of decision making as a way of giving meaning to the work situation.

Representative of this approach are the group planning method and job enlargement. In group planning,[8] a team of workers participates in decid-

[4] This and other technical terms used hereafter are defined in the Appendix.

[5] L. E. Davis, "Work Methods Design and Work Simplification," *Progress in Food Research*, Academic Press, Vol. 4 (1953), p. 37.

[6] L. E. Davis *et al.*, "Current Job Design Criteria," *Journal of Industrial Engineering*, Vol. 6, No. 2 (1955), p. 5.

[7] See for example, H. G. Thuesen and M. R. Lohman, "Job Design, Parts I and II," *Oil and Gas Journal*, Vol. 41, No. 35-36; H. B. Maynard *et al.*, *Methods-Time Measurement*, McGraw-Hill, 1948.

[8] E. A. Woodhead, "Jobs Break-Down Under Group Study Plan," *Electrical World*, Vol. 120, No. 4 (1943).

ing the content of the various jobs to be performed by members of the team. In job enlargement,[9] the job is specified in such a manner that the worker performs a longer sequence or a greater variety of operations and may be responsible as well for testing the quality of his work, setting up and maintaining his equipment, and controlling his own production rate.

There is a third approach which combines the process-centered and worker-centered approaches. In job rotation, for example, the operator is assigned a series of jobs to be performed in rotated order.[10] This method is often used to counteract the unfavorable effects of process-centered job designs in circumstances where the basic job specifications cannot be altered for one reason or another.

Some Criticisms

These new approaches to job design —the outgrowth of social science research and experiment in industry— may be welcomed on the whole as a step in the right direction.[11] By calling attention to the critical role of the worker himself in the modern industrial system, they have challenged some of the basic premises of traditional job design.

A strong word of caution is in order, however. Most, if not all, social science research in industry, as was pointed out earlier, has been based on the assumption that the contents of a job are technically inviolate. If this assumption is invalid, as it may well be, the research findings cannot be accepted without question.

Given this basic limitation, it is not surprising that most of the recent experiments in job design have been haphazard—a kind of trial-and-error attempt to remedy the defects of completely "engineered" job specifications. As yet, there has been relatively little systematic analysis, under controlled conditions, of the actual relationship between job content and other variables (long-term cost, productivity, motivation, and so on). Hence, in the absence of adequate theories of job design and experimental evidence to back them up, the doctrine of minimum costs still holds the field.

There are, however, three pioneering studies of job design to which this criticism does not apply. Since these investigations focused on actual job content and were carried out under controlled conditions, they may serve as models for future research in this area.

The first of these is the study made by Walker and Guest of the Institute of Human Relations at Yale University,[12] one of the first systematic in-

[9] C. R. Walker, "The Problem of the Repetitive Job," *Harvard Business Review*, Vol. 28, No. 3 (1950); E. J. Tangerman, "Every Man His Own Inspector, Every Foreman His Own Boss at Graflex," *American Machinist*, Vol. 7, No. 3 (1953), p. 7; J. D. Elliott, "Increasing Office Productivity Through Job Enlargement," AMA *Office Management Series*, No. 134 (1954), p. 3.

[10] A. Wood and M. L. Okum, "Job Rotation Plan That Works," *American Machinist*, Vol. 90, No. 9 (1946).

[11] They have been greeted with enthusiasm in many quarters. See for example, "Broadening the Job," *Time*, Vol. 63 (April 12, 1954), p. 100; D. R. Wright, "Job Enlargement," *Wall Street Journal*, March 11, 1954, p. 1; D. Wharton, "Removing Monotony from Factory Jobs," *American Mercury*, October, 1954, p. 91; J. K. Lagemann, "Job Enlargement Boosts Production," *Nation's Business*, Vol. 42, No. 12 (1954), p. 34.

[12] C. R. Walker and R. H. Guest, *The Man on the Assembly Line*, Harvard University Press, 1952; Walker and Guest, "The Man on the Assembly Line," *Harvard Business Review*, Vol. 30, No. 3 (1952), p. 71; Guest, "Men and Machines," PERSONNEL, May, 1955.

vestigations into the consequences of job specialization. Using depth interviews to explore workers' experiences on automobile assembly line jobs, the investigators analyzed the effects of mass production technology on job satisfaction and human relation.

Job Design on The Assembly Line

The characteristic principles of mass producton technology are defined in the study as follows:

1. Standardization.
2. Interchangeability of parts.
3. Orderly progression of the product through the plant in a series of planned operations at specific work stations.
4. Mechanical delivery of parts to work stations and mechanical removal of assemblies.
5. Breakdown of operations into their simple constituent motions.

The study focuses on the consequences of these principles as translated by the engineer into specific job designs—that is, the resulting gains and costs, both social and economic, for workers and for the company. Looking first at the gains, it is evident that the "engineered" job has yielded high levels of output per man-hour at low cost, providing profits for the company and a relatively low-priced product for the public.

In examining the social costs, however, some disturbing facts come to light. These can be summed up in the one overwhelming fact that the workers despise their jobs. This dissatisfaction does not seem to arise from the circumstances usually considered important by management such as pay, security, working conditions, pension plan, and supervision—the workers regarded these as satisfactory on the whole—but from certain features of job design:

1. *The anonymity of the individual worker* (what has been referred to previously as the principle of "minimum impact of the worker on the production process"). This is a consequence of designing *out* of the job virtually everything that might be of personal value or meaning to the worker. Specifically:
   a. The worker has no control over his work pace.
   b. His job is highly repetitive, having been broken down into the simplest motions possible.
   c. There is little or no need for skill because of the simple movements required.
   d. Methods and tools are completely specified and the worker has no control over them or any changes made in them.
   e. Because he never works on more than a small fraction of the product, the worker does not see the final results of his work, has no identity with the product, and cannot estimate the quality of his contribution to it.
   f. Since the job requires only surface attention, the worker does not become really absorbed in his work.
   g. The geographic arrangement of the production line severely limits social interactions. Men on the line work as individuals rather than as a work group, and the lack of group awareness seems to reinforce the feeling of anonymity.
2. *The depersonalization of the job,* as evidenced in the lack of job progression vertically. Since tasks have been simplified, skill differences between jobs are practically eliminated. Very few workers in the study had experienced any substantial change in job classification during a period of 12 to 15 years.

The manager and the engineer, of course, may feel that these social costs are more than justified by the gains for the company and the con-

sumer. This, however, is not the point. Granting that low unit cost production—or minimum total economic cost, which amounts to the same thing—is the fundamental requirement for progress and well-being in an industrial society, the main question is this: Is the method of job design chosen by the engineer the *optimum* one for achieving minimum total economic cost *which includes social costs by definition?*

The question implies, of course, that the engineer's criteria for measuring the effectiveness of job design are inadequate, and this inference is strongly supported by the evidence of this study. As Walker and Guest point out, turnover was high; the quality of performance was far from optimum; and labor-management relations were in a constant state of tension.

An Experiment in Redesigning Jobs

The second study to be examined,[18] one of the first controlled experiments on job design in an industrial plant, was aimed at investigating how productivity could be improved by altering job content. The experiment was designed to test the hypothesis that higher economic productivity could be achieved by:

1. Increasing the number of tasks in a job.
2. Combining tasks that (a) have similar technological content and skill demands; (b) are sequentially related in the technical process; (c) include final activities in the process or sub-process; (d) increase worker responsibility by enlarging the area of decision-making concerning the job; and (e) increase the opportunity for the worker to perceive how his contribution is related to the completion of the work process.

Two major criteria were chosen for analyzing the effectiveness of these modifications in job design: quantity of production per man-hour, and quality of work. Certain measures of attitude and satisfaction were also used.

The experimental setting was a manufacturing department of a unionized company on the West Coast. The department had been the subject of detailed engineering study for some years and its activities were organized according to the latest engineering practices. A similar department in the same company was used as a control group to permit monitoring of plant-wide changes which might affect employee attitudes and performance.

At the start of the experiment, the product—a hospital appliance—was being made on an assembly line at which 29 of the department's 35 members worked, the rest of the workers being engaged in supplying the line and inspecting the product. The 29 line workers were unskilled women with an average of four-and-a-half years' experience on the line (the range was from one to seven years approximately).

Each job on the line consisted in performing one of nine operations (these had similar skill requirements and technological content) as well as inspection in the form of rejecting defective parts. The operations were spaced at stations along the conveyor

[18] A. R. N. Marks, "An Investigation of Modifications of Job Design in an Industrial Situation and Their Effects on Some Measures of Economic Productivity," Ph.D. dissertation, University of California, 1954. This study was under the direction of Dr. R. R. Canter and the author. A detailed report of the study is to be published.

TABLE I

Experimental Conditions for the Modification of Job Design

Type of Job Design	Purpose	Criteria	Locations	Number of Workers	Total Number of Days Assigned	Number of Days Each Worker Assigned	Production Method
Line Job Design	Obtain reference base of job design where separate tasks are performed on rotated basis.	Quantity, quality, some measures of attitude and satisfaction.	Main department	29	26	26	Workers rotate among nine stations on belt conveyor, performing minute specified operations at pace of conveyor.
Group Job Design	Eliminate conveyor pacing. Other conditions same as above.	Quantity, quality.	Adjacent room	29	14	2	Workers rotate among nine individual stations using batch method.
Individual Job Design No. 1	Give workers experience on experimental job design.	Quantity, quality.	Adjacent room	29	16	2	Workers perform all nine operations at own stations, plus inspection and getting own supplies.
Individual Job Design No. 2	Obtain measure of experimental job design.	Quantity, quality. some measures of attitude and satisfaction.	Main department	21	27	6	Same as Individual Job Design No. 1.

Average Daily Productivity Indexes

(N = NUMBER OF DAYS IN EACH JOB DESIGN PERIOD)

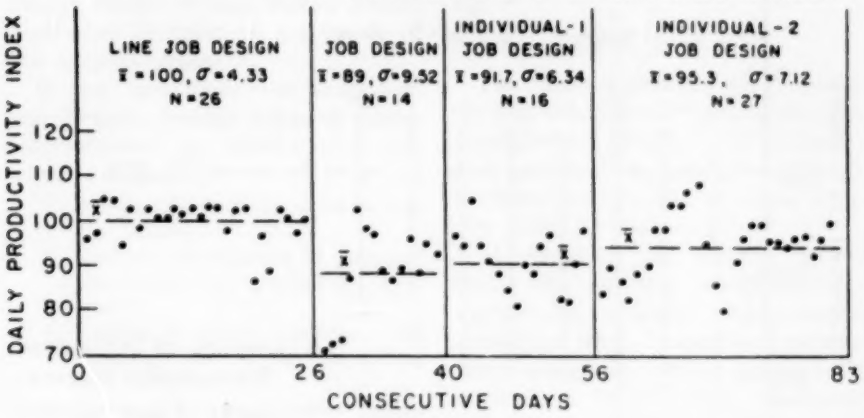


FIGURE 1

line, and the women rotated between hard and easy stations every two hours. Since the conveyor line set the pace, the workers were not responsible for the rate of output, and job rotation in effect eliminated any individual responsibility for the quality of output.

The experiment was divided into four phases (the details are given in Table 1):

1. *Line Job Design.* The original assembly line job, used as a reference base.
2. *Group Job Design.* In this modification, the conveyor is eliminated and the workers set their own pace. Otherwise, the operations are the same as above.
3. *Individual Job Design No.* 1. Workers perform all nine operations at their own stations, control the sequence of assembly, procure supplies, and inspect their own product.
4. *Individual Job Design No.* 2. Job content is the same as in (3) but workers are located in the main production area.

The changes in productivity resulting from the modifications in job design may be seen in Figure 1. In Group Job Design which eliminated conveyor pacing, productivity fell markedly below the Line Job Design average, indicating how conveyor pacing maintained output. The introduction of Individual Job Design, however, raised productivity above the Group Job Design average.

Although productivity under Individual Job Design did not reach the Line Job Design norm of 100, the level actually achieved is nonetheless impressive in view of the fact that the workers had only six days' experience on Individual Job Design No. 2 (only two days' experience on Individual Job Design No. 1), whereas they had an average of over four years' experience on Line Job Design. Moreover, the daily averages shown in Figure 1 do not reflect the trend resulting from consecutive days of ex-

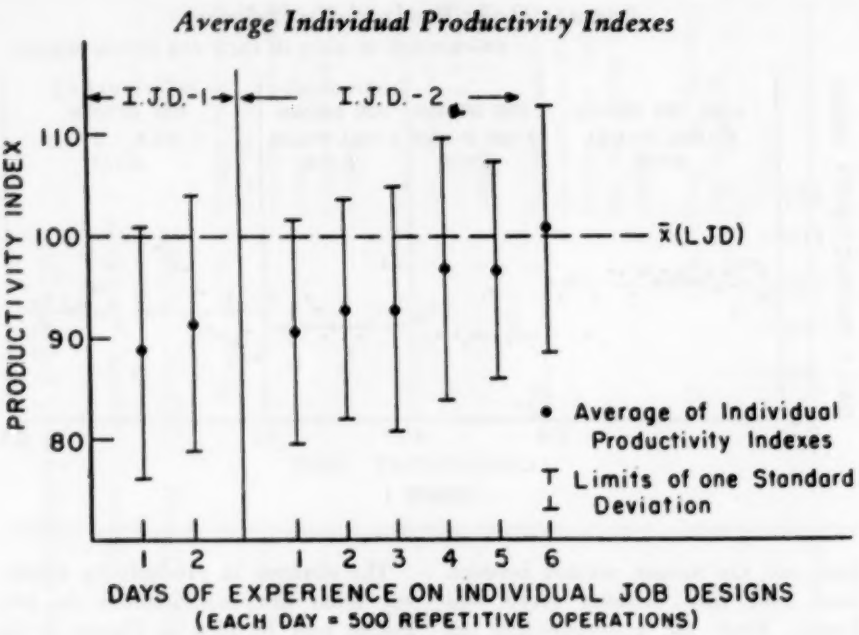


FIGURE 2

perience with the modified job designs since workers were assigned to the experimental designs on an overlapping basis. The data given in Figure 2, however, showing the average output of the whole group for *each successive day* of the trial period, indicate that the trend was consistently upward and that, on the sixth day, the group achieved an average productivity *higher* than that reached under Line Job Design.

An examination of the dispersion of points about the averages in Figure 1 reveals an even more significant result. The narrow dispersion about the average for Line Job Design reflects the fixed work pace imposed by the line—workers could not deviate from this pace unless there were absences on the line. On the other hand, when the workers set their own pace, individual differences came into play, as indicated by the wide dispersion about the average for the three experimental designs, and some individual performances were as much as 30 to 40 per cent higher than the Line Job Design average.

The superiority of the experimental job designs is demonstrated further in the quality data shown in Figure 3. (The number of kinked assemblies produced gave a direct measure of workmanship since the quality of parts and sub-assemblies was not involved.) Beginning with a high level of quality under Line Job Design, quality levels rose with the removal of conveyor pacing. Under Individual Job Design,

when responsibility for quality was placed in the hands of the workers, quality levels rose still higher, kinked assemblies dropping to one-fourth of the original value.

It was concluded that Individual Job Design, besides bringing about improvements in productivity and quality, had:

1. Increased the flexibility of the production process.
2. Permitted identification of individual deficiencies in productivity and quality.
3. Reduced the service functions of the department such as materials delivery and inspection.
4. Developed a more favorable attitude toward individual responsibility and effort—after experience with Individual Job Design, workers disliked the lack of personal responsibility characteristic of Line Job Design.

The third piece of research, a study carried out in an Indian textile mill, highlights the importance of the organizational component in job design.[14]

An Indian Textile Mill

The research problem was posed by the fact that the mill's production was unsatisfactory although new equipment had recently been installed and work loads assigned on the basis of an intensive study by engineers.

In reviewing job designs, it was found that existing worker-machine assignments produced organizational groupings and interaction patterns which mitigated against continuity of production. In one room containing 240 looms, for example, 12 activities were organized as follows:

A weaver tended approximately 30 looms
A battery filler . . . . . 50 looms
A smash-hand . . . . . 70 looms

[14] A. K. Rice, "Productivity and Social Organization in an Indian Weaving Shed," *Human Relations*, Vol. 6, No. 4 (1953), p. 297.

Percentage of Kinked Assemblies in Consecutive Lots

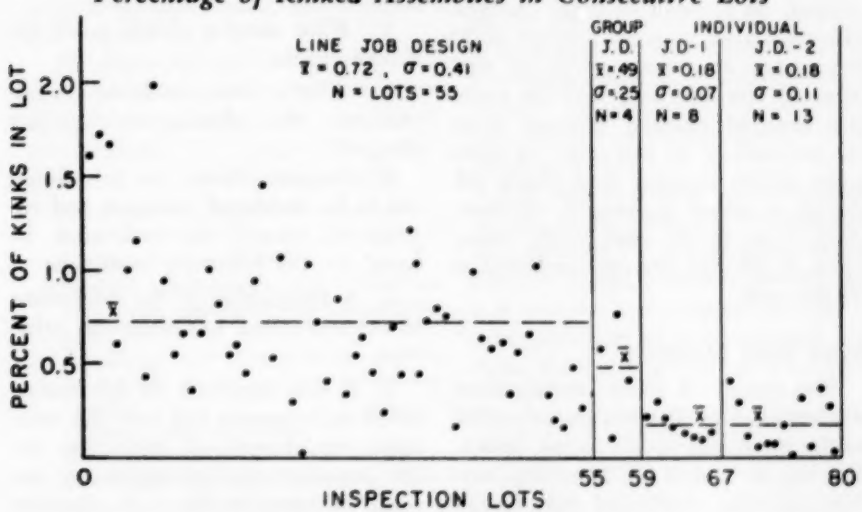


FIGURE 3

A gater, cloth carrier, jobber, and assistant jobber . . . . . each 112 looms

A bobbin carrier, feeler-motion fitter, oiler, sweeper, and humidification-fitter . . . . . each 224 looms.

Since these activities were highly interdependent, the utmost coordination was required to keep production going.

Each weaver came into contact with five-eighths of a battery filler, three-eighths of a smash-hand, one-quarter of a gater, and one-eighth of a bobbin carrier.

After a study of travel and communication patterns, the work groups were reorganized so that all of the workers who were interdependent became part of the same work group. Each group was then made responsible for the operation and maintenance of a specific bank of looms—a geographic rather than a functional division of the weaving room which produced regular interaction among individuals whose jobs were interrelated. As a result of these changes, efficiency rose from an average of 80 per cent to an average of 95 per cent after 60 working days, and the mean per cent of damage dropped from 32 per cent to 20 per cent. In those parts of the weaving shed where job design remained unchanged, efficiency dropped to 70 per cent, finally rising again to 80, and damage continued at 32 per cent.

Some Basic Questions

The results of these investigations underscore the criticism made earlier of the usual approaches to job design. Relying as it does on extremely narrow criteria, traditional job design has often failed to yield the gains in efficiency which have been anticipated. On the other hand, it has produced a host of *unanticipated* and disturbing secondary effects—monotony, dissatisfaction, resistance, and even obstruction. These failures have often been laid to the "contrariness" of human nature, but this is merely another way of saying that, given the current state of knowledge, the effects of job design are unpredictable.

Yet when jobs have been manipulated or redesigned in order to enlarge job content or personal responsibility, even within a given state of technology, *reduced costs have been reported as well as gains in productivity and morale.* These results could not have been achieved on the basis of the classical theory of job fractionalization.

In short, the traditional concepts and methods of job design have obviously failed to provide satisfactory answers to two fundamental questions:

1. *What criteria should guide the design of jobs?*

2. *What criteria should be used to evaluate the effectiveness of job designs?*

If adequate criteria for job design are to be developed, research and experiment toward this end must be based on the following conditions:

1. A recognition of the limitations of the traditional minimum-cost criterion.

2. A new approach to job design which encompasses not only the technical requirements of production but the organizational requirements, the social elements in the work situation (the individual's relationship with

fellow workers and with management), and the interaction between the human and the technological imperatives of the job.

3. The formulation of explicit theories of job design which will permit prediction. This requires systematic analysis of how specific changes in job content affect productivity, morale, and other variables.

4. Validation of these theories by experimental evidence gathered under controlled conditions so that causal factors can be identified and general principles established.

A New Approach

Since many of the flaws in job design can be traced to the inadequacies of the minimum-cost criterion, what is needed is a criterion of *total economic cost* which takes account of the multi-dimensional character of job design and includes relevant long term changes for economic, engineering, organizational, social, psychological, and physiological costs.

To determine how such costs are to be measured poses, of course, some formidable research problems. Among the variables that would have to be measured are the following:

Labor turnover and absenteeism.
Learning time.
Flexibility of work skills.
Quality deficiencies and production bottlenecks associated with job performance.
Grievances and interpersonal conflicts arising out of job and process requirements.
Organizational rigidities.
Service requirements such as supervision and inspection, engineering, maintenance, and personnel services.
Other overhead costs.

These considerations dictate a new approach to job design—the *job-centered approach*—which goes beyond the process-centered and worker-centered approaches. The job-centered approach operates on the premise that a job cannot be adequately designed without taking into account all three of the basic variables—process, worker, and organization—as well as the variables arising from their interaction, and that changing any of these in isolation may affect economic productivity—that is, total economic-cost—adversely.[18]

It is hoped that this approach will point the way for future research and lay the basis for a more satisfactory theory of job design.

The Outlook for Research

Research and experiment must reflect the multi-dimensional character of job design. While job content remains the focus of research, other variables should be included in experimental designs, and certainly the range of data required is such as to call for a problem-centered, research-team approach by engineers, psychologists, sociologists, anthropologists, economists, and others.

Job design research can be expected to pay off in a number of areas: For management, in re-examining organizational designs, reward systems, control devices, communications, and the administration of the personnel function; for the engineering sciences, in

[18] L. E. Davis and R. R. Canter, "Job Design," *Journal of Industrial Engineering*, Vol. 6, No. 1 (1955), p. 3. See also, L. R. Sayles, "Human Relations and the Organization of Work," *Michigan Business Review*, November, 1954, p. 21; R. H. Guest, "A Neglected Factor in Labor Turnover," *Occupational Psychology*, October, 1955.

improving design theories and methods in every area—product, process, equipment, plant layout, control systems, and so on; and for the social sciences, in re-evaluating human relations, programs, leadership methods, personnel techniques, communication networks, and organizational design at all levels.

The need for more effective job design, though urgently felt at present, will become even more acute as our economy moves into the era of automation. The introduction of automatic equipment makes rigorous demands on job design theory and methods in determining what processes should be automated, how automation systems should be designed, and how the human links in the control system should be related.

Even where automation is not applicable—and only a small number of jobs relative to the total will actually be transformed by automation—the design of non-automated jobs, either in automated plants or elsewhere, will be a critical factor in maintaining operations and meeting competition.

Hence—despite the popular illusion that automation will solve most of our problems by making the machines do the work—job design will remain a central problem for industry not only in the area of production and clerical jobs but, in view of the requirements of functional organization, at supervisory and managerial levels as well.

APPENDIX

Definitions of Terms

1. *Job:* The structure of tasks assigned to an individual together with the work methods and the setting. The *content* of a job comprises the following:
   a. *Work Content:* The assigned series of tasks which arise from the requirements of the technical process or the equipment used or from traditionally established needs.
   b. *Methods Content:* The specification of the ways in which the work activities are to be performed, including tools, equipment, and location. It is often referred to as methods design.
   c. *Organization Content:* The organizational setting in which the assigned tasks are to be carried out—for example, the location of the job in a work group, hierarchical relations, and so on.
   d. *Personal Content:* The factors in the job that affect personal behavior, growth, motivations, etc.

2. *Job Design:* The process of specifying the content of a job (work, methods, organizational, and personal content) in terms of a job definition or a job description.

3. *Total Economic Cost:* The total cost of producing a unit of product or service. In addition to the immediate charges for labor, materials, overhead, and so on, it includes the relevant long-term charges for economic, engineering, organizational, social, psychological, and physiological costs.

4. *Economic Productivity:* Productivity measured on the basis of total economic cost—that is, direct productivity modified by the addition of appropriate overhead or hidden charges stemming from absenteeism, labor turnover, quality failures, inflexibility, and so on.

5. *Minimum Cost:* The cost of producing a unit of product or service which includes only the immediate charges for direct labor, materials, and overhead.

. . . A supervisor's standing with his work group may depend not only upon his formal qualifications but upon how well he measures up to workers' expectations. Here are the profiles that emerged when a large group of shop and white-collar employees were asked what kind of supervisor they preferred.

Informal Requirements For Supervisory Positions

HOWARD M. VOLLMER and JACK A. KINNEY
Ordnance Civilian Personnel Agency Headquarters
Ordnance Weapons Command

THOUGH MUCH has been written about the *formal* organization of industrial, commercial, and administrative enterprises, interest has shifted in recent years to the problems of *informal* organization. It has come to be recognized that the unplanned, spontaneous interaction of employees within a formal system, far from being the result of failures in the planning and administration of the system, or an aberration of human behavior, is instead absolutely indispensable to the system's functioning.[1] The objectives of formal organization cannot be realized without the support of informal organization—if the two are in conflict, the enterprise must eventually break down. The point is illustrated dramatically by the accounts of how workers impressed into service in Nazi war factories during World War II practiced a most effective form of sabotage merely by adhering strictly to formal work requirements and refusing to exercise judgment or initiative.

It follows, then, as Elton Mayo has emphasized, that an enterprise has to deal with two sets of problems simultaneously: (1) The technical problems of accomplishing the goals of the enterprise, and (2) the human problems of securing the workers' satisfaction in cooperating toward these goals.[2]

[1] See F. J. Roethlisberger and W. J. Dickson, *Management and the Worker*, Harvard University Press, Cambridge, Mass., 1950; and Chester Barnard, *The Functions of the Executive*, Harvard University Press, Cambridge, Mass., 1951, pp. 120-123.

[2] Elton Mayo, *The Social Problems of an Industrial Civilization*, Harvard Business School, Boston, Mass., 1945, p. 13.

NOTE: The opinions expressed in this article are those of the authors and do not necessarily reflect the policy of any United States Government agency.

Probably no one in the management hierarchy has as much to do with the worker's satisfaction on the job as his immediate supervisor. If, however, workers are to respect the authority of their supervisors and to accept the directives received through them, it is essential that supervisors meet the *informal expectations* of the workers—and of management—as well as the formal specifications for the job.

This article will report some of the findings of a study of informal requirements for first-level supervisory positions among the civilian employees of the United States Army Ordnance Corps. While the formal requirements for these positions were set forth in job descriptions, it was recognized that the formal requirements in themselves could not insure the accomplishment of Ordnance objectives. Unless the informal requirements were also determined, it would not be possible to assure the satisfaction of the employees and enlist their whole-hearted cooperation in the enterprise.

Aims of the Study

With these considerations in mind, the questions to be investigated were formulated as follows:[3]

1. *In what general areas do workers form expectations regarding their supervisors?*
2. *How do these expectations vary among workers in different occupations?*
3. *Do the expectations of workers differ from those of supervisors and in what respects?*

The data were gathered through questionnaires administered to approximately 2,500 Ordnance employees in five typical Ordnance installations in 1954. To secure a representative sample, the installations were chosen from five major regions of the United States, and within each installation, employees were selected at random for participation in the study. Personal interviews were conducted with an additional sample of 200 employees in order to pinpoint what they meant by certain common responses.

The findings are partially summarized in profile form in the accompanying charts which cover five occupational groups:[4]

1. Male clerical personnel[5] 65
2. Technicians (production expeditors, equipment specialists, engineers, *et al.*) 210
3. Laborers 205
4. Machine operators (turret lathe, engine lathe, production machine, *et al.*) 173
5. Shop craftsmen (machinists, die makers, *et al.*) 90

In all five groups, average age and length of service tended to increase with increase in grade. This should be kept in mind in interpreting the findings.

[3] These represent the major areas under study in Phase I of the Ordnance Supervisor Selection Research Project, an on-going project which is now in Phase II.

[4] For a more complete report, covering 18 occupational groups, see Howard M. Vollmer and Jack A. Kinney, *Identifying Potential Supervisors*, University of Iowa, Bureau of Labor and Management, Research Series No. 12, 1956.

[5] Although female clerical employees greatly outnumber males in Ordnance, only male clerical employees are included here. The other occupational groupings reported are entirely male. For a discussion of the significant differences in the Ordnance findings for male and female employees, see Howard M. Vollmer and Jack A. Kinney, "Supervising Women is Different," *Personnel Journal*, Vol. 34 (1955), pp. 260-263.

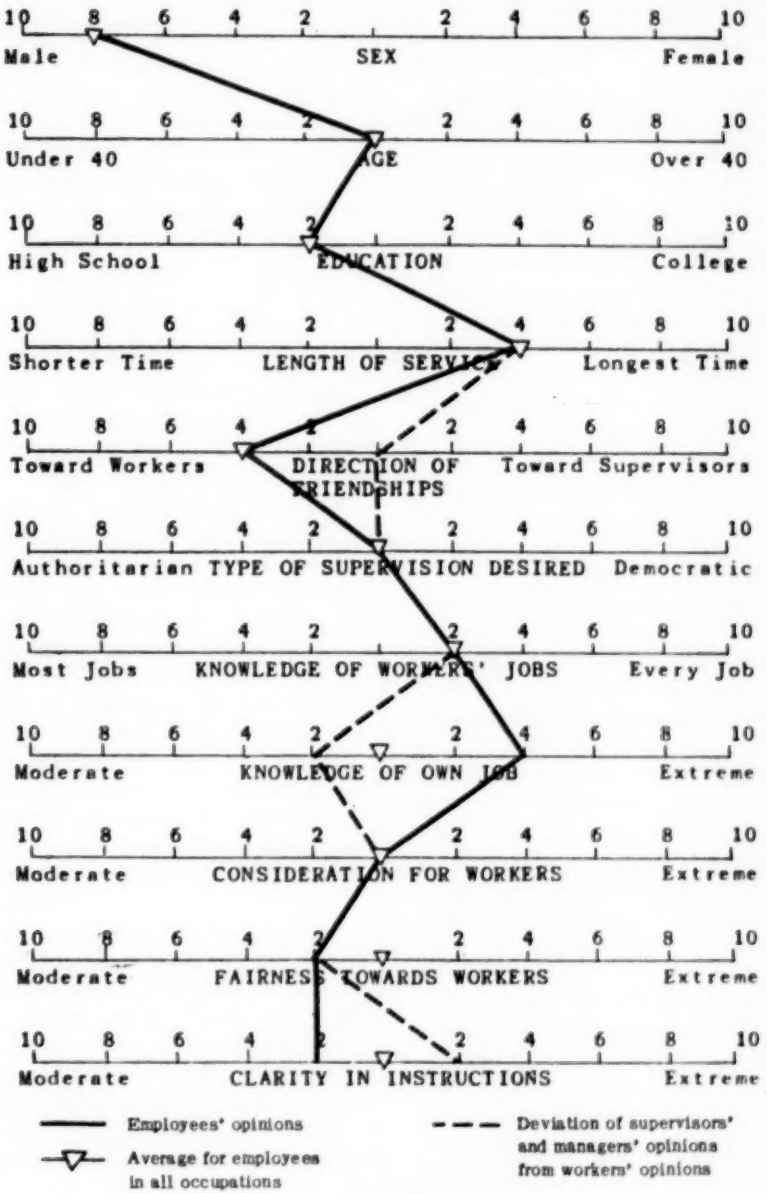
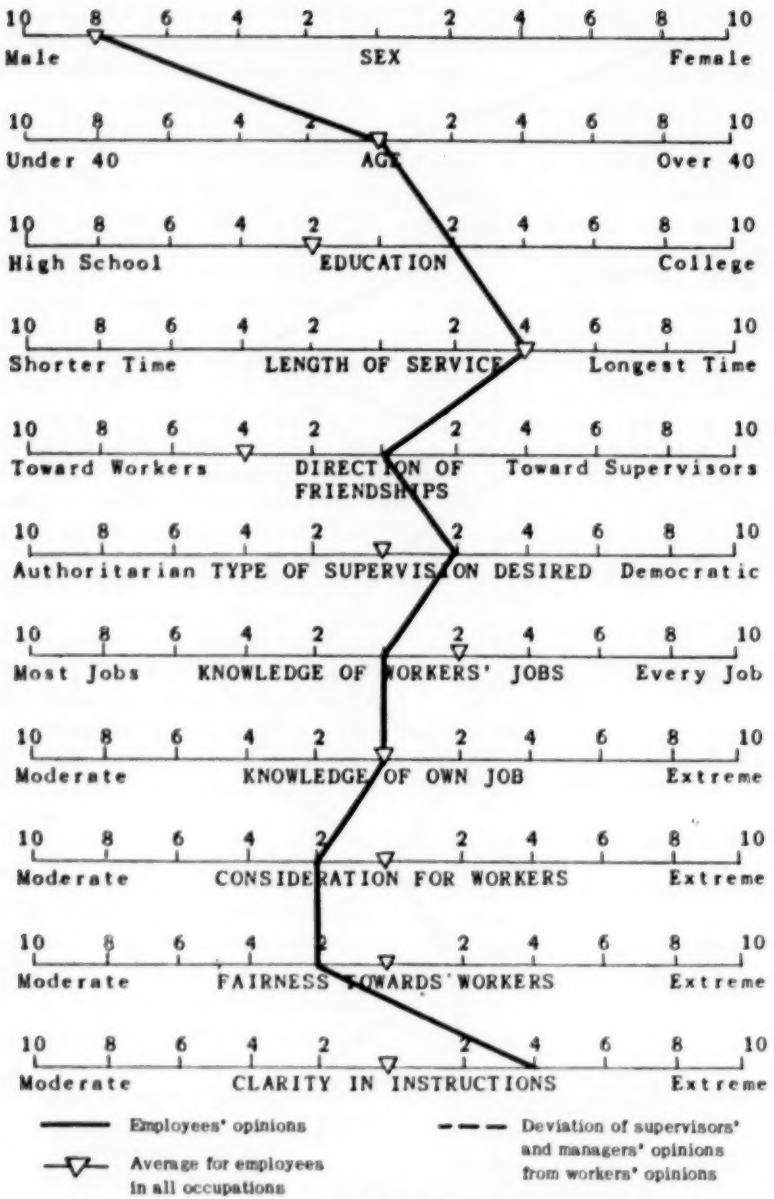

10 8 6 4 2 2 4 6 8 10
Male SEX Female
Under 40 AGE Over 40
High School EDUCATION College
Shorter Time LENGTH OF SERVICE Longest Time
Toward Workers DIRECTION OF FRIENDSHIPS Toward Supervisors
Authoritarian TYPE OF SUPERVISION DESIRED Democratic
Most Jobs KNOWLEDGE OF WORKERS' JOBS Every Job
Moderate KNOWLEDGE OF OWN JOB Extreme
Moderate CONSIDERATION FOR WORKERS Extreme
Moderate FAIRNESS TOWARDS WORKERS Extreme
Moderate CLARITY IN INSTRUCTIONS Extreme
Employees' opinions
Average for employees in all occupations
Deviation of supervisors' and managers' opinions from workers' opinions

CHART 1

Profile of Supervisor Preferred by Male Clerical Personnel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Employees' opinions
Average for employees in all occupations
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CHART 2

Profile of Supervisor Preferred by Technicians

From a review of previous studies, interview data, and personal experience, it was determined that there are two principal areas in which employees tend to develop expectations regarding their supervisors:

1. The status or prestige characteristics of supervisors: What kind of people are they?
2. The behavior of supervisors: How do they act?

Status Preferences

Four status characteristics seemed to be of special importance to employees: sex, age, educational level, and length of service. Hence, respondents were asked to state on the questionnaire whether they would prefer their supervisors to be male or female, over forty years of age or under, high-school or college-trained, and with longer or shorter service in the work unit. To obtain a combined index of preferences on each question, the percentage of employees indicating a preference for one alternative was subtracted from the percentage indicating a preference for the opposite, and these percentage indexes were then rounded off to the nearest 20 per cent interval.[6]

These indexes are indicated on the accompanying charts by an inverted triangle on the base line of each profile characteristic. From the position of these marks, it is possible to see at a glance the average preference of respondents in *all* occupational categories with respect to each of the 11 supervisory characteristics listed, and to compare these averages with the preferences expressed by *each* occupational group.[7]

For example, the index mark for *Sex* is located on the *Male* side at point 8, indicating that most employees preferred a male supervisor. Since our Western culture has traditionally emphasized the superior position of the husband both in the home and at work (although this pattern may be changing in significant respects), most men would probably experience, at least initially, some humiliation and loss of prestige in working for a woman.

On the other hand, only two occupational groups showed any preference with respect to the age of supervisors.

A slightly greater preference was evidenced for high-school-trained over college-trained supervisors. This preference may reflect the fact that the formal requirements for many first-level supervisory jobs actually do not include college training. Furthermore, the status difference between highly educated supervisors and less educated workers may militate against effective supervision—a worker may rationalize disagreements with his superior by saying, "He just thinks he is better than we are because he went to college."

Employees showed a decided preference for supervisors with longer service. The assurance that seniority counts, at least to some extent, in promotions to supervisory positions is probably an important element in the worker's sense of security about

[6] By the Standard Error of Estimate technique, it was determined that differences of less than 20 per cent might be only chance variations and therefore would not indicate true differences in the population studied.

[7] Differences in expectations between workers and supervisors are indicated in the charts by the broken profile lines. Where no significant differences were found, both sets of responses are indicated by the solid black lines.

his job. In any event, a growing concern with seniority has been manifested in recent years both in collective bargaining and in the personnel policies of non-unionized firms.[8]

Types of Behavior Preferred

A series of questions was designed to ascertain the degree to which employees wished to share the decision-making functions of supervisors—for example, "Would you expect your supervisor to ask for your opinion before making decisions on important matters?" The answers to these questions were combined into an index called "preference for democratic or authoritarian supervision." As indicated on the charts, employees as a whole showed no marked preference for either type of supervision.

Another question dealt with whether employees preferred supervisors who direct their friendships toward their subordinates or those who direct their friendships toward other supervisors. It was evident that most respondents preferred supervisors who maintain their closest friendships with workers.

Two items concerning the knowledge expected of supervisors are included in the profile. As may be seen from the charts, employees preferred the supervisor who "knows every job" under his supervision to one who "knows most jobs." Considerable importance was also attached to the supervisor's knowing his own job well—this item was the one most frequently written in by respondents on an open-ended question concerning "what things you think are most important in a supervisory job."

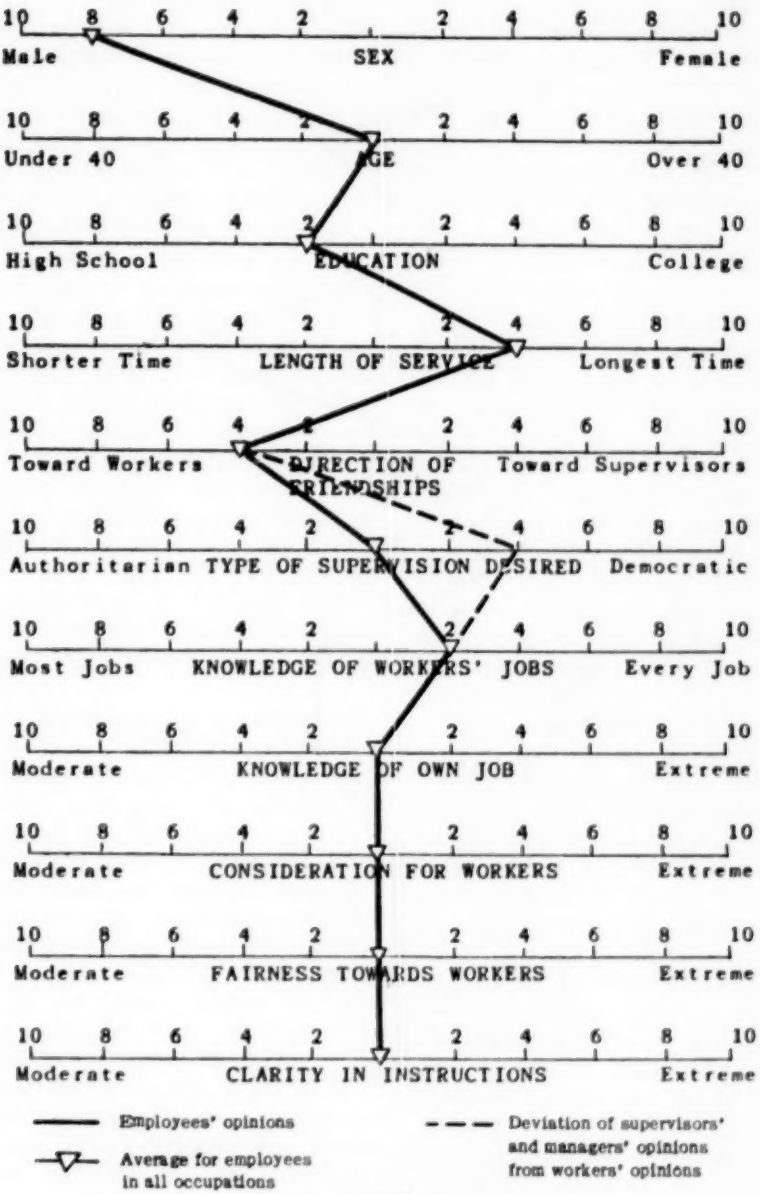
Other desirable characteristics suggested by the employees themselves were consideration for workers, fairness toward workers, and clarity in instructions. With regard to these characteristics, the average expectation fell somewhere between *moderate* and *extreme*, although the emphasis varied with different occupational groups.

Occupational Variations

In the typically all-male occupational groups—shop craftsmen and machine operators—the preference for male supervisors was even stronger than in the other groups where females are more likely to be present (it should be recalled that the data cover only male employees in each occupation). In these same two groups, where the average age of the workers is higher than that of the other groups, the age of supervisors also assumed more significance.

Among technicians, where technical training is valued, formal education was a more important factor in the status of supervisors than among clerical employees, and technicians more frequently expressed a preference for college-trained supervisors. Interestingly enough, however, the situation was reversed among blue-collar workers, with shop craftsmen showing an even stronger preference for high-school-trained supervisors than did machine operators or laborers. In the most highly skilled shop trades, apparently, mechanical skill is valued

[8] See for example, Harry Ober, "The Worker and His Job," *Monthly Labor Review*, Vol. 71 (1950), p. 18; J. J. Speed and J. J. Bambrick, "Seniority Systems in Non-unionized Companies," *Conference Board Reports*, NICB Studies in Personnel Policy, No. 110 (1950); National Association of Manufacturers, "Current Industrial Seniority Practices: a Survey," THE MANAGEMENT REVIEW, Vol. 36 (1947), pp. 84-86.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High School EDUCATION College
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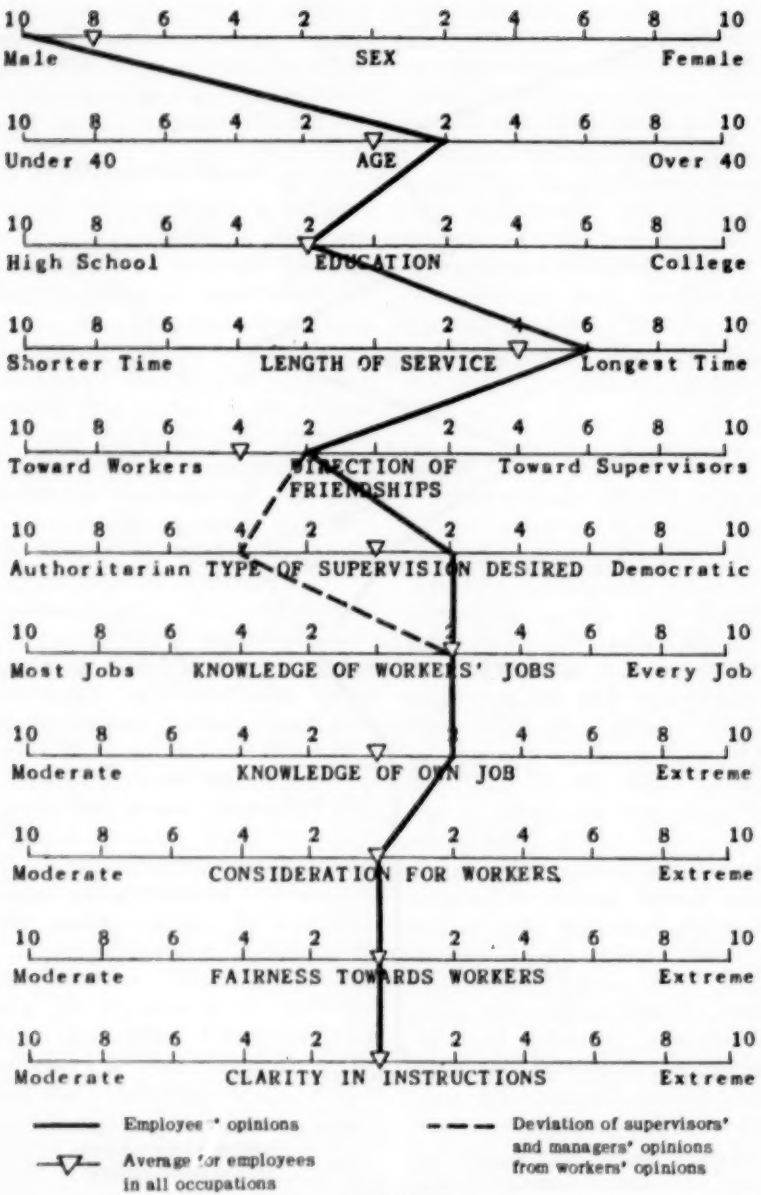
Moderate FAIRNESS TOWARDS WORKERS Extreme
10 8 6 4 2 2 4 6 8 10
Moderate CLARITY IN INSTRUCTIONS Extreme
Employees' opinions
Average for employees in all occupations
Deviation of supervisors' and managers' opinions from workers' opinions

CHART 3

Profile of Supervisor Preferred by Laborers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Moderate CLARITY IN INSTRUCTIONS Extreme
Employees' opinions
Average for employees in all occupations
Deviation of supervisors' and managers' opinions from workers' opinions

CHART 4

Profile of Supervisor Preferred by Machine Operators

much more than formal education—education may even be a hindrance in gaining status among the workers. Length of service also appeared to be a more valued status characteristic of supervisors among machine operators and shop craftsmen, who themselves tend to have higher seniority, than among other workers.

The behavior expected of supervisors also varied significantly among the different groups. In both the blue-collar and white-collar categories, employees in the lowest-graded jobs showed greater preference than those in higher grades for supervisors who direct their closest friendships toward workers. It would seem that workers in the lower grades are less likely than others to obtain satisfactions directly from their work and are therefore more desirous of obtaining satisfactions from close interpersonal relationships with supervisors as well as fellow workers.

As for democratic or authoritarian supervision, technicians emphasized democratic supervision more than clerical employees did, probably because of the more complex nature of the work tasks of technicians and their consequent need for more participation in supervisory decision making. Among blue-collar workers, on the other hand, machine operators stood out above laborers and shop craftsmen in their preference for democratic supervision. Since machine operators are more likely to feel tied down to a routine and subordinated to an impersonal process, they may tend to seek relief in a democratic type of supervision which permits them to participate in determining work assignments.

Again, employees in the lower-graded occupations were more likely to expect a supervisor to have knowledge of every job under his supervision than those in higher grades, probably because they have need more frequently to call upon their supervisors for technical assistance.

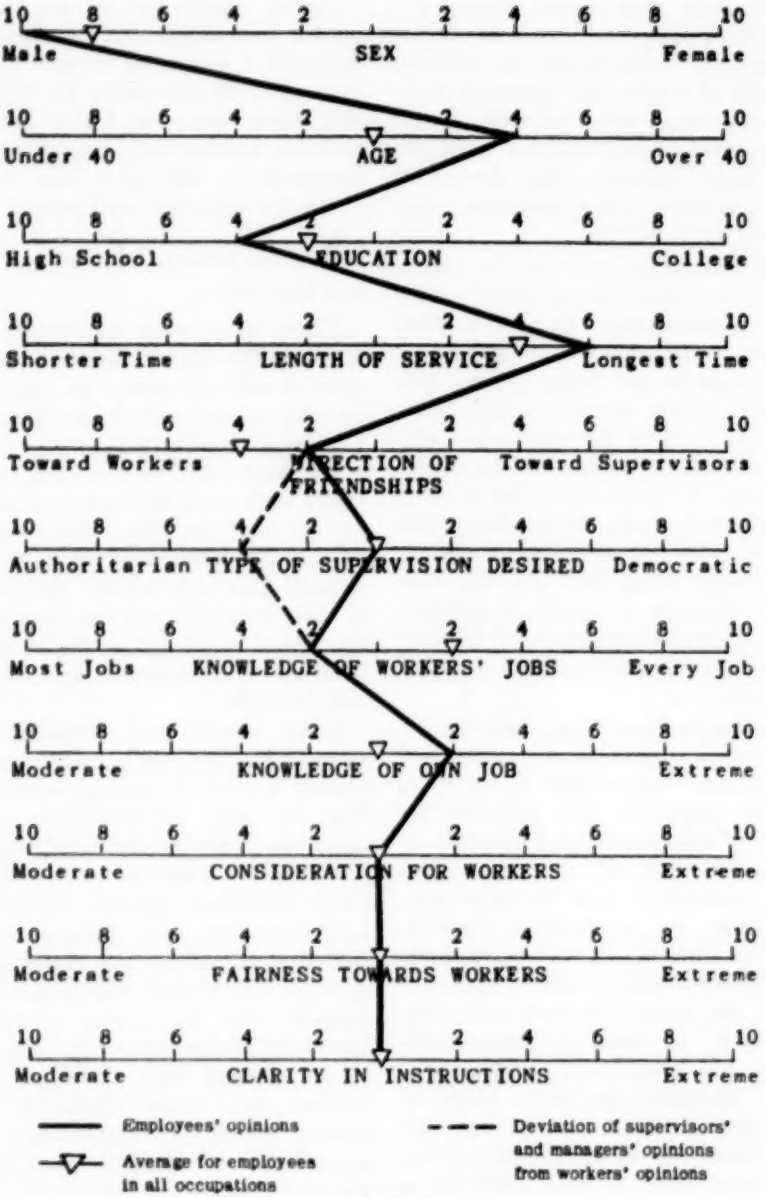
Differences Between Workers and Supervisors

There were some significant differences between the expectations of workers and supervisors in regard to the characteristics considered desirable in supervisors.

As Chart I indicates, clerical supervisors were more inclined than workers to say that the direction of supervisors' friendships made no difference, that supervisors' knowledge of their own jobs was less important than their knowledge of the workers' jobs, and that clarity in instructions was desirable.

These supervisors' attitudes are more in line with the expectations expressed by *female* clerical employees than by male clerks.[9] Since male clerks are likely to aspire to become technicians and therefore to minimize status distinctions between themselves and supervisors, it is understandable that they should expect supervisors to form their closest friendships with workers and to have a thorough knowledge of the supervisory job. On the other hand, male clerks are less inclined than female clerks to emphasize clarity in instructions. It seems that female clerks want to know specifically what they are to do and prefer to be treated in an impartial

[9] See Vollmer and Kinney, "Supervising Women is Different," *loc. cit.*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Under 40 AGE Over 40
High School EDUCATION College
Shorter Time LENGTH OF SERVICE Longest Time
Toward Workers DIRECTION OF FRIENDSHIPS Toward Supervisors
Authoritarian TYPE OF SUPERVISION DESIRED Democratic
Most Jobs KNOWLEDGE OF WORKERS' JOBS Every Job
Moderate KNOWLEDGE OF OWN JOB Extreme
Moderate CONSIDERATION FOR WORKERS Extreme
Moderate FAIRNESS TOWARDS WORKERS Extreme
Moderate CLARITY IN INSTRUCTIONS Extreme
Employees' opinions
Average for employees in all occupations
Deviation of supervisors' and managers' opinions from workers' opinions

CHART 5

Profile of Supervisor Preferred by Shop Craftsmen

manner without the intrusion of personal elements.

There were no significant differences between the expectations of technicians and their supervisors. Among laborers, machine operators, and shop craftsmen, workers differed from supervisors on only one point: the type of supervision considered desirable. Laborers desired a more authoritarian supervision than their supervisors would expect to give them, whereas both machine operators and shop craftsmen expected a more democratic supervision than their supervisors considered appropriate.

These findings seem to indicate that, at least in Ordance, supervisors of laborers tend to *overestimate* the desire of the workers for participation in decision making, while supervisors of higher-skilled manual workers tend to *underestimate* the workers' desire for participation in supervisory functions.

Summary and Conclusions

The Ordnance workers surveyed in this study tended to form expectations as to the status characteristics of their supervisors (sex, age, education, length of service) and their behavior. The status expectations most strongly emphasized were that supervisors be males of longest service in their work units. The behavioral expectations most strongly emphasized—these were the ones suggested by the workers themselves in their write-in responses to the questionnaire—were that supervisors manifest a thorough knowledge of their own jobs, consideration and fairness toward workers, and clarity in giving instructions.

As for differences in expectations among occupational groups, the findings indicated that the workers in each group expected their supervisors to have status characteristics—sex, age, education, and length of service—similar to those of the group itself. A more complicated pattern of behavioral expectations emerged. Lower-graded workers were more inclined than others to expect supervisors to maintain their closest friendship with workers and to have knowledge of every job supervised. Technicians and machine operators expressed a preference for democratic supervision. Among white-collar workers, technicians tended to emphasize clarity in instructions, and clerical workers tended to emphasize their supervisor's knowledge of his own job.

Workers and supervisors differed most sharply with respect to the type of supervision considered desirable for blue-collar workers, the direction of supervisors' friendships, knowledge of the job, and clarity of instructions.

While these findings are believed to be representative of the civilian employees of the Army Ordnance Corps as a whole, no claim is made that they are applicable elsewhere under different conditions. They may be of value, however, in suggesting the kinds of informal requirements for supervisory positions which occur in varying configurations in other industrial or commercial situations.

. . . At GE's Flight Propulsion Laboratory Department, a three-year test of a new personnel evaluation plan has confirmed the basic principle that evaluation should be a continuing process in which employees themselves are active participants.

Appraising Professional Personnel: One Company's Experience

C. E. GRAY*

The General Electric Company

IT IS NOT at all surprising that leaders have always taken more kindly to planning and directing than to measuring the results of their efforts. The inventive mind is inclined to balk at routine chores and turn impatiently to new horizons. Yet, tedious as it may be, taking stock is an essential function of the executive. The results of one cycle of activity provide the starting point for the next, and it is foolhardy indeed to move ahead without getting one's bearings from past experience.

In measuring the over-all results of an undertaking, it may be sufficient to use indices of a general character. More specific measures have to be devised, however, in evaluating the results of individual performance, especially for managerial and professional personnel. Since the Flight Propulsion Laboratory Department of the General Electric Company has been engaged for some time in the effort to develop such measures, a review of our experiences may be of interest to other companies confronted with the same problem.

A Performance Appraisal Plan, based on a comparison of accomplishments with pre-determined measures of accountability, was introduced in 1954 in place of the trait-rating system previously in use. In describing the initial results of the new plan in this journal,[1] it was suggested that modifications would undoubtedly be necessary and that further study would be needed in certain areas. Since then the plan has been thoroughly tested and a number of changes, introduced. Before describing these changes, it may be helpful to outline the major features of the plan.

[1] M. S. Kellogg, "Appraising the Performance of Management Personnel: A Case Study," PERSONNEL, March, 1955.

* Mr. Gray is Manager of Personnel Development, Employee Relations Operation, at the Flight Propulsion Laboratory Department of the General Electric Company.

The Performance Appraisal Plan has three basic purposes:

1. *To measure job performance.*
2. *To serve as a guide in making salary adjustments and relating pay to performance as closely as possible.*
3. *To provide a basis for self-development planning.*

How the Plan Works

To accomplish these objectives of the plan, the following procedures were established:

1. ***Supervisors are required to appraise the performance of subordinates at regular intervals.*** Starting with the initial selection and placement of an employee, evaluation is a continuing cycle which includes orienting the worker to the job, identifying the results expected and the skills and training required, making adjustments in requirements as necessary, and appraising over-all performance from time to time.

While much of this activity is carried on informally in discussions between supervisors and employees, there is need as well for periodic written appraisals. These are of three types: Four-Month, Annual, and Spontaneous. Each serves a specific purpose in the Appraisal Plan and is closely related to other personnel development programs.

The Four-Month Appraisal is made after an employee is hired or transferred. The supervisor reviews the work areas to be covered, the major responsibilities of the job, and the measures of accountability used in evaluating the results, emphasizing those areas in which the employee needs further development. Any adjustments which may be required in applying the measures of accountability are also determined at this time.

Approximately one year after an employee is assigned to a new position, the Annual Appraisal is introduced. This has three phases: (1) Comparing accomplishments with the standards; (2) determining what salary adjustment is deserved; and (3) reviewing the positive and negative aspects of job performance. This third phase provides the information on which the Personal Improvement Plan is based.

Both Four-Month and Annual Appraisals are regularly scheduled and a follow-up is made to make sure that no employee has been overlooked. In addition to these appraisals, managers may make a Spontaneous Appraisal whenever the situation warrants it. In case of an outstanding performance, for example, an increase in pay may be recommended; if performance is below minimum requirements and a remedial plan is not feasible, the employee's abilities and interests are re-evaluated and a reassignment is made.

A section of the Performance Appraisal Form is shown in Exhibit 1.

2. ***Employees participate in selecting major areas of work and in establishing standards for measuring results.*** Initially, the manager alone was responsible for the development of goals, the assignment of work, and the evaluation of results. Since the company believes, however, that each employee should participate in formulating the standards by which his work is to be measured,[2] this philoso-

[2] Ralph J. Cordiner, *New Frontiers for Professional Managers*, New York, McGraw-Hill, 1956, pp. 95-102.

PERFORMANCE APPRAISAL FORM

Important Result Area or Responsibility	EVIDENCE OF PERFORMANCE	*Fails to meet Minimum Requirements*	*Meets Minimum Requirements*	*Doesn't quite meet Expected Requirements*	*Meets Expected Requirements*	*Exceeds Expected Requirements*	*Far exceeds Expected Requirements*	*Weight (% of time spent on Measure)*
1								
2								
11								
12								
Over-all Performance								100%

Summary Statement Supporting Over-all Rating:

EXHIBIT I

PERFORMANCE APPRAISAL FORM

Suitability for Present Position

The continued personal and professional growth of an individual depends considerably upon the degree to which his job requires the experience and capabilities which he possesses. Check below the statement which best describes this relationship.

1. Employee does not possess the experience and/or capabilities to perform his present job effectively. ☐
2. Employee has the experience and capabilities to perform his present job effectively, and there is ample room for further growth on this position. ☐
3. Employee has nearly outgrown his present position and is almost ready to assume greater responsibility. ☐

Factors Related to Future Development

1. What strengths has the employee demonstrated which will help his future development?

2. What weaknesses has the employee demonstrated which may hinder his future development?

3. What are your immediate job assignment plans for this employee?

4. What is the employee's most logical next job or area of work? What time factors are involved?

5. What is the employee's long-range potential for growth?

Additional Comments:

EXHIBIT I (Continued)

phy has been incorporated into the program.

This "principle of participation" is used extensively to promote understanding of organizational objectives.[3] In designing the annual as well as the longer-range programs for each organizational unit, employees have an opportunity to contribute in group discussions or in writing. The yardsticks developed in this planning process—what results are expected and how they will be measured—can also be applied by each individual to his own work.

An employee newly hired or transferred does not at first fully participate in the evaluation process. At the time of the Four-Month Appraisal, however, he may negotiate adjustments in work assignments or standards with his supervisor. Eventually, he becomes a full-fledged participant in developing annual programs, revising position guides and measures of accountability, and establishing performance standards.

3. ***Supervisors discuss with each employee where he stands and how he can improve his job performance.*** Most of the benefits to be gained from an appraisal program are dependent on frank and full discussions: The employee learns what is expected of him and receives the necessary guidance, while the manager is forced to define work areas and the standards applicable to the job.

4. ***Employees work together with their supervisors in formulating plans for self-development.*** Since self-determination is a basic condition for growth and development, the program requires that the employee himself take an active part in planning his future with the company. Work experience and training opportunities are provided, but the employee's progress depends upon how he puts these to use. Since everyone does not possess an "inner sense" of direction, the manager must check the practicability of the employee's plan and provide the necessary encouragement and guidance.

In brief, then, the aims of the program are to assess potential abilities, determine areas of interest, and select activities which will help the individual acquire the skills and experience needed for positions of increased responsibility.

Other Aspects of the Program

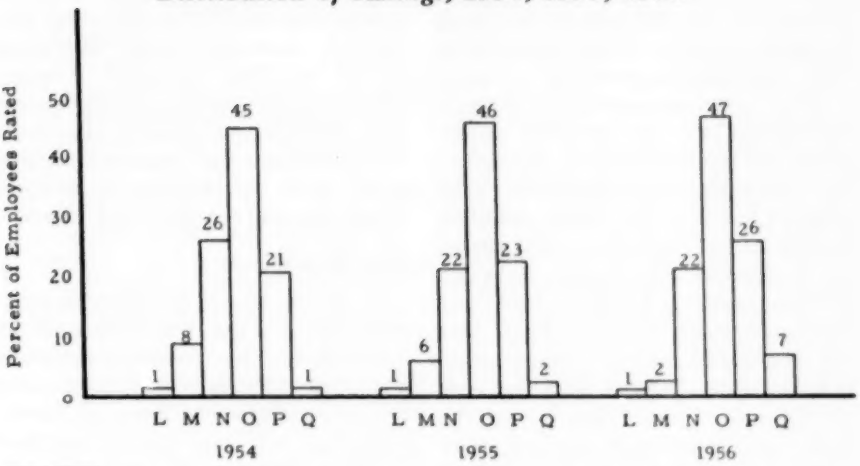
When the program was initiated in 1954, managers at all levels participated in training sessions which dealt with the philosophy of the new plan as well as its operational aspects. Since then, managers have continued to receive coaching on an individual basis.

Appraisals were successfully completed for nearly all employees during 1955-1956. While this could not have been accomplished without careful scheduling and follow-ups, no doubt appraisals were also speeded by the employees' desire to know how they stood. The coverage was up to expectations, but the time involved was excessive—the whole process of appraisal, review, and discussion took on the average about two months.

The distribution of ratings over a three-year period is shown in Exhibit 2. It is rather surprising that the

[3] R. C. Davis, *The Fundamentals of Top Management*, New York, Harper & Bros., 1951, pp. 200, 624.

Distribution of Ratings, 1954, 1955, 1956



The letters in the graph refer to the rating scale which is a part of the overall evaluation summary on the Performance Appraisal Form. They are defined as follows:

L: *Fails to meet requirements.*
M: *Meets minimum requirements.*
N: *With few exceptions, meets expected requirements.*
O: *Without exception, meets expected requirements.*
P: *Exceeds expected requirements.*
Q: *Far exceeds expected requirements.*

EXHIBIT 2

pattern remained substantially unchanged, but there are a number of factors which may account for this: (1) Since the growth of the department and of the company has afforded numerous opportunities for transfers and promotions, the time spent in any one position has been relatively short. (2) As employees became proficient in their jobs and showed interest in advancement, managers planned new assignments for them. (3) Since ratings were based on a comparison of accomplishments with measures of accountability for which supporting evidence was required, they were not influenced by personal considerations or other extraneous factors.

One other point should be mentioned. The procedure of checking appraisals for completeness and consistency with salary recommendations, has made it possible to detect certain weaknesses—organizational as well as personal—and to take corrective action.

Evaluating the Results

In an opinion survey undertaken in March, 1956, to identify factors affecting productivity, several items about the appraisal system were included, to measure the reactions of workers and supervisors to the system. The responses were generally favorable, especially in reference to certain features of the plan such as

knowledge of the procedures, participation in the selection of work to be done, relation of pay to performance, and regular coverage.

There were some critical comments, however, about the appraisal discussions and self-development planning—for example, many employees indicated a desire for more effective coaching and guidance. To secure more detailed information on these points, random interviews were held which brought out the facts that the discussions were (a) often omitted altogether, (b) too brief and one-sided, and (c) not helpful to the individual. Since most of these comments concerned employees' relations with their supervisors, a thorough review of the manager-man relationship was undertaken. The findings were as follows:

1. There was an inclination to postpone or even avoid the appraisal discussions. This was attributed to the amount of work required for each appraisal, but evidently there were other reasons as well.
2. The discussions were regarded as "formal" talks which strained the relationship between supervisor and employee.
3. Employees being appraised did not always participate actively in the interview—they seemed to feel that they were called in merely to "hear what the manager had to say."
4. Employees were inclined to disagree with their supervisor's evaluation unless the grounds for it were explained to them.
5. The preparation of the Personal Improvement Plan by managers was regarded as inconsistent with the concept of self-development.
6. Employees felt that they were not receiving adequate guidance in improving their job performance or in preparing for more responsible work.

Although these findings were of serious concern, it was felt that they did not necessitate major alterations in the appraisal program. A somewhat different approach to discussions and development planning was instituted, however, and some refinements were made in existing procedures. These changes are described below.

New Approaches

A review of self-development planning indicated that this feature of the program was not receiving sufficient attention. Although self-measurement and self-analysis had been discussed, these had not been clearly identified as the essential first steps in self-development planning. It was apparent therefore that this aspect of the program needed emphasis and integration if each employee was to become an active participant in determining his own growth plan.

To make a start in this direction, the Accomplishment Report, a device previously in use in certain sections, was extended and incorporated in the appraisal plan. Employees prepare this report on a monthly, bimonthly, or quarterly basis (depending upon what type of work they do) and managers discuss it with them briefly and informally. The advantages of this procedure are the following:

1. The Accomplishment Report is the first step in self-measurement: The employee reviews his work and compares his accomplishments with predetermined measures.
2. Self-measurement is initiated on a short-run basis. While an employee may have some difficulty in evaluating his entire year's work, he can readily examine his performance over a brief span of time.

3. The employee continuously checks himself on tasks for which he is responsible.
4. The informal discussions following the reports provide more or less continuous guidance. Appraisal is thus a cycle of activities rather than a single formal review at the end of the year.
5. Factors influencing performance are identified early. Both manager and worker can examine the situation while it is still fresh in their minds.
6. At an early stage of the work cycle, the employee begins to identify what he can do to improve his performance. In some instances he may be able to make an analysis and reach conclusions by himself, but in others the manager needs to help, usually by asking such questions as: "How much time do you spend on each phase of the work? What are the additional things you need to know? What parts were easiest to do and why? What factors are slowing you down?"

To assist the manager in assembling information needed for the evaluation, the Advance Notice of Appraisal was developed. This notice is addressed to the employee who is to be appraised and is intended to (a) let him know that the manager is on schedule and hasn't forgotten the appraisal; (b) get him to participate in the appraisal at an early stage; (c) give him an opportunity to present all the information that he feels should be considered; and (d) stimulate self-analysis and planning.

After the employee has replied to the Advance Notice, the manager holds a brief, informal discussion with him — the Preliminary Discussion — to clarify the items submitted and to insure agreement on the factors to be considered in the evaluation. Some managers feel that this discussion, while it adds nothing to the facts already available, is nevertheless worth while because it establishes a sound basis for the appraisal session which comes later.

After making his evaluation, the supervisor reviews it with the next level of management, taking up the major factors in the employee's performance, his accomplishments, his over-all rating, and the amount of salary increase he is considered to have earned. This review should take the form of a discussion between the two managers rather than a mere reading of notes.

In the appraisal interview which follows, the manager discusses with the employee the rating assigned to him, the measures of accountability, and also any further training that may be required. The employee is expected to participate freely in the discussion, and the manager's skill in encouraging his participation is considered so important that it receives special emphasis in the training for managers at all levels.

The Self-Development Plan

The Self-Development Plan (previously referred to as the Personal Improvement Plan) is prepared by the employee and reviewed with the manager (see Exhibit 3). Although this review is closely related to the previous appraisal discussion, it is conducted separately in order to allow the employee sufficient time to assimilate the earlier comments and to formulate a worthwhile plan of action. This plan should emphasize specific activities which are designed to improve performance on the present job. If performance is already satisfactory,

SELF-DEVELOPMENT PLAN

Distribution of Copies

Original —Employee
Duplicate—Manager
Duplicate—to accompany Performance Appraisal, if made at same time.

Prepared by _____

Reviewed & discussed by _____

Date _____

Indicate below the most important areas in which you wish to improve your performance on your present position, the specific actions to accomplish such improvements, the target date for completion, and the assistance, if any, needed.

Major Improvements Needed	Specific Action to Accomplish Improvements	Target Date for Completion
Experience		
Technical Knowledge		
Managerial Abilities (Individual or for a Component)		
Relationships With Others		
Other (Specify)		

Planning for Next Areas of Work

What are your job interests in terms of the next 2-3 years?

What additional experience, training, or skills do you feel that you will need for your next position?

What specific support or assistance will you need from your Manager to prepare for your next area of work?

Manager's Comments:

_____
Signature & Position

_____
Date

EXHIBIT 3

however, or the position is nearly outgrown, more emphasis is placed on the knowledge, skills, or experience required for promotion.

It is not enough, of course, merely to prepare a plan. The employee needs constant encouragement and guidance in carrying out his objectives, and it is the manager's responsibility, therefore, to provide opportunities and resources wherever neccessary, to inquire from time to time about the progress being made, and to appraise the effects of the plan on job performance. Self-development thus becomes a part of the total cycle of evaluations designed to improve performance and prepare the employee for increased responsibilities.

Training Managers

In instituting these new approaches to discussions and self-development planning, it was recognized that managers would have to be trained in (a) the philosophy and principles of the revised approach, (b) the procedural steps involved (some of these had been altered in order to lighten the administrative burden and shorten the time cycle), and (c) the skills and techniques required to carry out the new plans effectively.

In the first two areas, managers could be trained adaquately enough through written instructions and small discussion groups. But the ability to handle discussions is essentially a human relations skill and cannot be mastered in one easy lesson. Therefore, training in this area would have to be carried on over a period of time as part of a general program for management development.

So far, the method of Interview Training has produced the best results. A leader, working with three managers at a time, reviews the principles and techniques of interviewing, and each participant, after observing a demonstration, conducts his own interview and analyzes the results. Besides learning interviewing techniques, managers become more critical in their judgement, more sensitive in interpersonal situations, and more effective in guiding discussions.

Follow-Up Plans

These changes were initiated in selected components of the Department in the last half of 1956 and in the remaining components early in 1957. While the initial reaction has been favorable, it is too early to say whether the desired results will be obtained, and a thorough evaluation will be possible only after two rating cycles are completed.

Since an appraisal program demands continuous effort over long periods of time, it is anticipated that further improvements will have to be made, especially in defining areas of work responsibility, formulating measures of accountability, developing indices of performance, and setting quantitative and qualitative standards.

. . . In aiming merely to keep its employees "satisfied," is management setting its sights too low? This study of 14 foremen in a New England chemical plant explores some interesting paradoxes in employee attitudes and suggests how management can develop a more positive approach to morale problems.

Contentment or Morale?

A Case Study

HERBERT E. KRUGMAN
Richardson, Bellows, Henry & Company, Inc.

AT TIMES it may be a real problem for management to determine whether employee morale is good, bad, or indifferent. Even an attitude survey may not get to the root of the matter. If employees are shown to be "satisfied" or even "happy," management may nevertheless persist in feeling that "something is missing," if not downright wrong.

Frequently there *is* something missing. Even among employees who are reported to be "satisfied," there may be lacking *that combination of enthusiasm and purposefulness which results in effort*—call it productive morale, if you will. Morale is qualitatively different from contentment, which is the mere absence of complaint, and the one is not synonymous with the other. Where morale is high to start with, discontent may be tolerated for some time before morale becomes impaired.

Contentment and morale, then, are qualitatively different types of orientation to the world of work. All too often, however, this difference is not taken into account in conventional surveys of attitudes or opinions. To label an investigation a "morale" survey or a "job satisfaction" survey is, in a sense, to prejudge the findings or to limit their scope. If morale is high, for example, while satisfaction is low —or vice versa—how can these different orientations be identified? What factors influence each of them?

Questions of this kind cannot be answered unless the two types of orientation are carefully distinguished and a measure devised for each. An approach along these lines—what might be called *parallel evaluation*—promises new insights into work situations and employee reactions.

A case in point is that of the 14 foremen who are the subject of the study reported in this article. Employed at a small chemical plant in New England, the men griped constantly about their jobs, yet—despite

good employment opportunities elsewhere in the area—they did not leave. Moreover, they were acknowledged as loyal and hard-working employees both by the company and within the local community. What kept them going?

The Background of the Study

The morale problem at this plant must be viewed in the light of the special circumstances which attended the establishment of the plant in 1940, among them the following:

1. A shortage of labor, aggravated by the outbreak of war.
2. A lowering of personnel standards—workers had to be recruited from distant areas and women introduced as supervisors.
3. The inauguration of three-shift operations in a community which was unaccustomed to shift work and regarded chemical production as "unhealthy."

If nothing else were known about the plant, these facts alone would suggest that certain difficulties such as high starting rates or excessive turnover were likely to arise and that management might have to "lean over backward" in order to "keep the men happy."

The Findings

Intensive interviews with the individual foremen produced a total of 173 comments, 114 unfavorable and 59 favorable.

The unfavorable comments fall into 49 categories. Of these 49, the 10 listed below cover 60 of the 114 comments.

Unfavorable Comments	*Number of Foremen Commenting*
The foremen are not backed up by management . . . they are "forgotten men," "middlemen" . . . the men have no respect for them	9
Can't get a good day's work out of the men (since the union came in) . . . men tell others to slow down . . . horseplay . . . playboys	8
Seniority holds good men down . . . have to push some with poor ability	7
Management pampers the union . . . leans over backwards . . . soft policy . . . union has too much control	6
Resent having to get union approval of work assignments . . . petty griping on assignments	6
Shift work	6
Turnover in top maintenance position . . . hurts prestige of department . . . need a good plant engineer	5
Not being allowed to touch the work	5
Rigid craft lines . . . the attitude is, "That's not my job"	4
Having to get information from union men that should be provided by management	4
Other categories (39)	54
Total	114

Approximately half of all the unfavorable comments refer, in one way or another, to the union-management situation. Despite some comment to the effect that "things are getting a little better now," this situation is obviously a source of deep dissatisfaction. Shift work and the turnover of top personnel in the maintenance division also receive some adverse comment but not to the same degree.

Although the foremen seem to feel frustrated and humiliated at every turn, it is striking that they do not express any hostility toward top management or outright disgust with their jobs. They feel rather that the company has made mistakes but that the situation is not beyond remedy. For the most part they identify with management, showing as much concern for operating efficiency as for personal dignity. At the same time, they give the union its due and, on the whole, seem to be trying to maintain a reasonable attitude—as one foreman explained, "The pendulum has swung too far. Management exploited labor before Roosevelt. Now it's the other way."

Some Other Causes of Dissatisfaction

The dissatisfaction of the foremen may have other causes, however. Although the foremen blame the union when they "can't get a good day's work out of the men," the trouble may lie in actual deficiencies in the workforce or even in the foremen themselves. Considering the company's recruiting problem, to which attention has been called earlier, it may well be that the low caliber of the employees rather than the policies of the union is the root cause of the difficulties in labor-management relations.

While the foremen identify with management, they do not seem to have any strong attachment to the company. Their basic attitude might be expressed in these terms: (1) It's a good job in a good plant, and (2) being a foreman is something to be proud of.

Favorable Attitudes

The favorable comments fall into 25 categories. Of these 25, the 10 listed below account for 40 of the 59 comments.

Favorable Comments	*Number of Foremen Commenting*
Interest in the job . . . learned a lot . . . variety	8
Good working conditions . . . good safety . . . dust and fumes removed . . . clean work	7
Starting rates	5
Security and steadiness of the job	4
Treated fairly	3
Good superiors	3
Opportunities for advancement	3
Lack of favoritism . . . seniority and aptitude exams account for this	3
Steady pay increases	2
Company will always give you a hearing . . . can talk to anyone at the top	2
Other categories (15)	19
Total	59

The comments in the first two categories explain why foremen were able to maintain a positive attitude toward their jobs even in the face of persistent frustration. *Interest in the job* and *learned a lot*—here is the key to morale. It would seem from these comments that acquiring new job skills gave the men a feeling of enhanced status, of being "worth more," of being a specialist of sorts. In talking over technical matters with the men during the interviews, there was no mistaking their pride in the job or the fact that many of them regarded work in the plant as a genuine training experience. (Such an attitude on

the part of employees, it should be noted, is one of the major advantages enjoyed by a company engaged in technical operations, and management should make every effort to encourage it.)

Ironically enough, these favorable responses to the job may be linked with the same set of circumstances as the unfavorable responses reported earlier. If, on the one hand, the foremen's dissatisfaction with low output and lack of cooperation can be attributed to weaknesses in personnel arising from recruiting difficulties, it may also be true, on the other hand, that workers recruited from "the bottom of the barrel" are more appreciative of the opportunity to learn than those with higher qualifications.

In the second category listed, the acknowledgment of *good working conditions* reflects credit upon the company, especially in an industry notorious for dust and fumes. This response is the more striking because the townspeople have exactly the opposite impression of working conditions at the plant. Instead of influencing the employees unfavorably, however, this disparity probably serves as a constant reminder of the company's interest in their comfort and safety—in fact, the foremen were in the habit of saying that "things are never so bad as some people seem to think."

The Outlook for Morale

In the past, when the workforce was made up largely of unskilled and semi-skilled labor, it was the primary objective of management to keep labor "content." Now, however, as industry moves into an era of rapid technological progress, higher skills will be called for, workers will have greater responsibilities both for equipment and for performance, and the per capita investment in personnel can be expected to increase substantially. Under these circumstances, management can no longer be satisfied with mere contentment on the part of its employees—a more positive kind of morale will be required.

One of the major consequences of automation may well be its impact on morale. As workers are retrained and acquire new skills in which they can take pride, a more positive orientation toward work is almost certain to make its appearance.*

Not that morale depends only upon levels of skill. An even more basic element in morale—and the prime mover in the transformation of contentment into morale—is the sense of accomplishment.

These relationships may be summarized in three basic principles:

1. Morale is more significant than contentment in situations where employees can contribute through positive action—exerting skill or effort, for example. Contentment is more significant in situations where employees can contribute only by refraining from negative action such as being absent, late, or careless.

2. To change an orientation of contentment to one of morale, the opportunity to make positive contributions must be widened.

3. A basic factor in the development of morale is a sense of accomplishment—the experience of being useful and valuable.

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* See H. E. Krugman, "How Automation Will Affect the Labor Force," THE MANAGEMENT REVIEW, November, 1956.

Directory of Local Personnel Groups: 1957

A Supplementary List

The following additional listings include some corrections that were received too late for publication in AMA's directory of local personnel and training groups, which appeared in the January, 1957, issue of PERSONNEL.

Personnel Groups

Tuscaloosa Personnel Association. President, Niles P. Howard; Vice President, A. C. Cade, Jr.; Secretary-Treasurer, L. Lewis, Personnel Office, The Central Foundry Company, Holt, Ala. Meets monthly.

Inland Personnel Association. President, Croft Wright; Vice President, Phyllis Staples; Treasurer, Glen de Yoe; Secretary, Hal Sheldon, Citizens National Bank, P.O. Box 712, Riverside, Calif. Meets monthly.

Personnel and Industrial Relations Association, Inc., 731 South Spring Street, Los Angeles 14, Calif. President, Robert P. Armstrong; Vice President, Paul G. Kaponya; Treasurer, Gerald Townsend; Secretary, Walter E. Miller. Meets monthly. *PIRAscope.*

Central Connecticut Industrial Training Association. President, Francis J. McGurkin, Pratt & Whitney Company, West Hartford, Conn.; Vice President, Ralph Swenson; Treasurer, John Sloan; Secretary, A. Majewski. Meets monthly.

Northeastern Connecticut Personnel Association. President, Albert N. Surdam; Vice President, Robert Ash; Treasurer, Arthur Goven; Secretary, John Quinn, Rogers Corporation, Rogers, Conn.

Bloomington-Normal Personnel Council. Chairman, Jack Seacord; Vice Chairman, James Wilson; Secretary-Treasurer, R. A. Sproat, 1911 East Jackson Street, Bloomington, Ill. Meets monthly.

The Hospital Personnel Association. President, Mrs. Mildred S. Lapham; Vice President-Treasurer, Alvin Miller; Secretary, Mrs. Dorothy T. Jackson, Meadowbrook Hospital, P.O. Box 108, Hempstead, N. Y. Meets monthly.

Westchester Personnel Management Association. President, D. A. Roberts; Vice President, H. T. Creedon; Treasurer, B. J. McDonald; Secretary, W. F. Lapchick, 3 Manchester Road, Tuckahoe 7, N. Y. Meets monthly.

High Point Personnel Association. President, Ralph Gurley; Vice President, Francis White; Secretary-Treasurer, Gilbert Ross, Sylvania Electric Products, Inc., High Point, N. C. Meets monthly.

Tristate Industrial Association, Inc., 1713 First National Bank Building, Pittsburgh 22, Penna. President, J. P. Roche; Vice President, A. D. McCombs; Vice President-Treasurer, L. V. Dauler. Meets annually with occasional special meetings.

Training Groups

Training Officers Conference. Chairman, Homer T. Rosenberger; Vice Chairman, Frank A. Petrie; Secretary-Treasurer, John P. Eberle, Chief, Personnel Standards & Development Division, Bureau of the Census, Department of Commerce, Washington, D. C. Meets monthly. *Training Specialists Directory.*

. . . The success of a management training program depends in no small measure on a well-organized system of communications for insuring the continuous exchange of information throughout all levels.

Management Training: Organizing The Communications "Flow"

E. L. BAAB

Corporate Training Manager
Olin Mathieson Chemical Corporation

TODAY'S HIGHLY competitive markets demand that our management team achieve not only the most effective use of employees, but also maximum return from the machines and equipment that comprise a large portion of our capital investment. With the rapid growth of automation, industry faces an ever-increasing need for a workforce that is highly trained in the techniques of operating and maintaining automatic equipment and for a management team that is skilled in up-to-date, operational "know-how."

At Olin Mathieson, which is a highly diversified corporation producing an extremely wide range of commodities in the chemical, pharmaceutical, metals, explosives, arms and ammunitions, and electrical fields, we take the view that there is no longer any question whether we can afford an effective development and training program in our plants. The question is, rather, whether we can afford *not* to have a constructive program of development for the better use of our men, materials, and machines.

Until about three years ago, many of our training programs approached the problems encountered in our plants in a somewhat vague manner. Some of these programs were "canned," and covered in a general way such problems as their authors believed were likely to be encountered in the places where they were to be used. Our experience has shown, however, that a development and training program ca be successful only if it meets the plant's specific current needs and tries to anticipate the problems that will confront the management group in the future. We

NOTE: This article has been adapted from a paper presented at the annual meeting of the American Pharmaceutical Manufacturers Association held in New York City last December.

believe, therefore, that all development and training programs must be tailor-made for each individual plant and, if necessary, for each department within the plant.

Tailoring a program for a specific plant presents, of course, the same problems as are inherent in all training programs:

1. How are training and development needs to be determined?
2. How are these needs to be communicated to the management team?
3. Who shall actually do the training?
4. How is the program to be evaluated?
5. What follow-up methods should be employed?

Because we believe that a training program should be carried out by those who are best acquainted with actual operating problems, we place the prime responsibility for guiding and steering all development and training within a particular unit on the unit's line management group. To facilitate this, our procedure is to set up a three-man development and training committee, which is usually made up of one top manager (approximately superintendent level) from each of the production, maintenance, and service groups. In some instances, where production and research are closely allied, it may be advisable to include also a top manager from the research group on the committee. Because of its place in the line organization, this development and training committee is in an excellent position to keep the training on a practical level, to guide it in such a way that it meets pertinent, everyday plant needs, and to evaluate results.

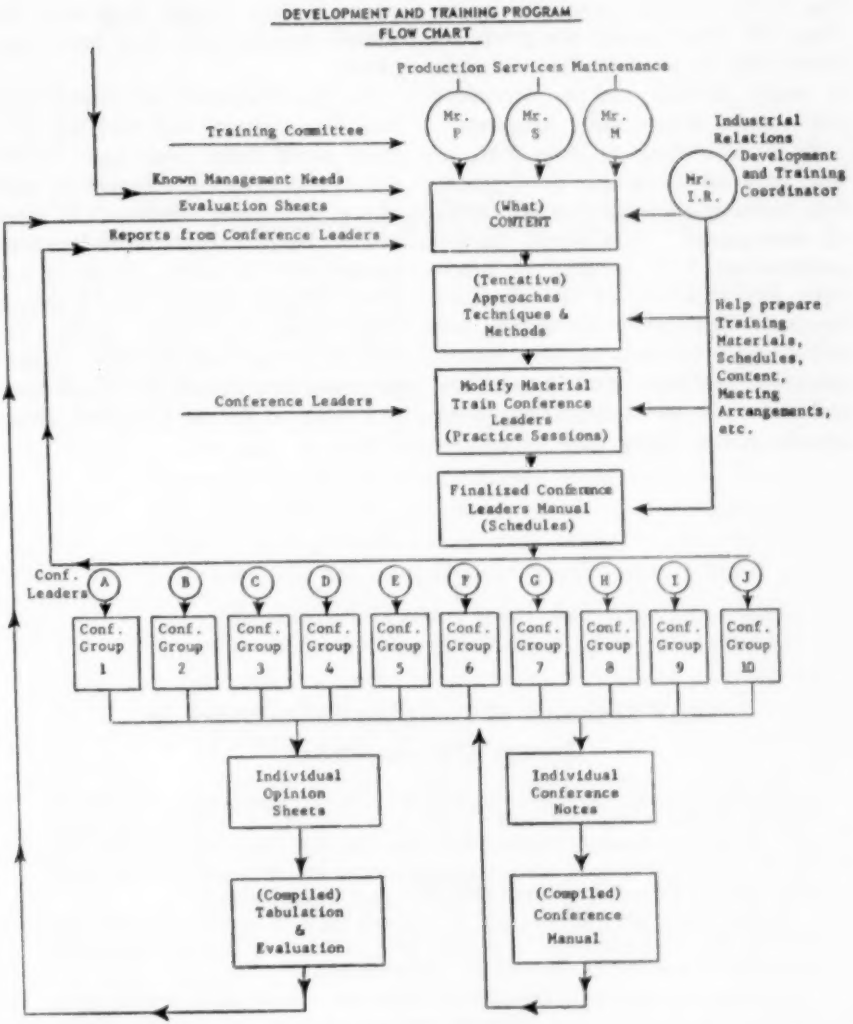
To enable the committee to carry out its functions, clear-cut procedures and definite lines of communication that are understood by the entire management group must be established. This, of course, is a matter of proper organization. The basic organization and procedural steps as well as the lines of communication we use in a unit of training are shown in the accompanying flow chart.

The Communications "Flow"

One of the features worth noting about this procedure is the careful preparation for the training conference before the material is presented to the entire management group (first four blocks). Another is the carefully compiled conference-report manual, which each conferee receives as a part of the "follow-up" after the conference has been completed.

Probably one of the most valuable features of the program is the "feedback" arrangement, whereby the committee receives an evaluation sheet from each of the participating conferees. The committee also gets a report from each of the conference leaders. In addition, of course, a fair amount of information on known management needs is available. All this information helps the training committee to do a more objective job of planning, guiding, and steering the development and training program.

It is true that, when this type of training organization is first presented to top line management, the immediate reaction is likely to be, "Where are we going to find the time to serve on the committee?" We have found, however, that after this type of training organization has been installed for some time, our top line people



become interested and serve willingly. As for the myriad details that have to be taken care of in planning and developing a training unit, this is where the Development and Training Coordinator can be of the utmost help. It is his job to prepare training aids and conference leaders' manuals, draw up schedules, and make meeting arrangements. He is also responsible for summarizing the conference notes, writing the conference report manual, and tabulating and evaluating the individual opinion sheets for presenta-

tion to the training committee for review. In other words, his prime responsibility is to assist the committee in every possible way to formulate and operate a successful program.

It is interesting to note that, in this type of program, development and training take place at all levels of management. As a result, the superintendent level is kept in touch with the problems of the first-line foreman. The conference leaders are called upon to help develop minor operating policies and procedures and, what is more important, they remain on the "firing line" to follow-up with their people, long after the formal training unit has been completed.

At Olin Mathieson we started with this development and training program about three years ago. It has since been generally accepted in most of our plants and locations. At present, we have 78 plants in 60 locations spread over 30 states. Some of our plants employ as few as 15 people while others have over 5,000. We feel, therefore, that this type of program has been tested for effectiveness in a wide range of industrial situations.

1957 Sessions of Training Laboratory in Group Development

BASED UPON over ten years of pioneering research and experience in the field of training leaders in the skills and understandings necessary for developing effective groups, the National Training Laboratory in Group Development will hold two three-week laboratory sessions at Gould Academy, Bethel, Maine this year, from June 16 through July 5 and from July 14 through August 2.

Approximately 150 applicants will be accepted for each of these two sessions. Persons involved in problems of working with groups in a training, consultant, or leadership capacity in any field are invited to apply.

The training program is organized so that each trainee group is enabled to use its own experience as a laboratory example of group development. Group skills of analysis and leadership are practiced through the use of role-playing and observer techniques. This year the Laboratory will go more deeply than in the past into the whole problem of community leadership as well as training for leadership in organizations, and in staff, committee, and discussion groups. Finally, a major portion of the last week of the sessions is spent in planning and practicing application of Laboratory learnings to back-home jobs.

The NTLGD is sponsored by the National Training Laboratories of the Division of Adult Education Service, National Education Association of the United States. For further details write to Mrs. Aileen Waldie, the National Training Laboratory, 1201 Sixteenth Street, N.W., Washington 6, D. C.

Special Feature Section

NOT LONG AGO, *the U.S. Naval Research Laboratory asked a group of scientists, secretaries, and personnel men to evaluate the pre-employment data on 12 science graduates who had been hired by the Laboratory during the war and whose subsequent performance was a matter of record. The results showed that, as indicators of potentially productive engineers and physicists, the judgments of the scientists, secretaries, and personnel men were about as effective as drawing the names of the candidates out of a hat.*

Admittedly, this was a small and rather specialized study. Nevertheless, the findings fairly point up the fact that our present selection procedures fall considerably short of reliability in predicting success—or failure—on the job.

Each of the five papers in this section is concerned with some aspect of the problem of finding the right man for the job—a problem that, as the authors of the concluding article point out, goes all the way back to the recruitment of the youth at the bottom of the industrial ladder. If the reader will find here many questions but few, if any, definitive answers, that is, in its way, a measure of the uncertainty that still overhangs this crucial phase of personnel administration.

. . . Identifying the factors which make for success or failure in a management job remains more an art than a science. But the projective techniques for measuring personality—though no substitute for the standard selection procedures—may reduce the margin of error in executive selection and placement.

The Use of Projective Techniques In Management Selection

ERWIN K. TAYLOR and EDWIN C. NEVIS

Personnel Research & Development Corporation

IT HAS BEEN found time and again in analyzing executive performance that many more executives fail because of personality problems than for want of technical skills—seven times as many, according to a recent survey.[1] The facts are all too familiar, but the explanation is by no means self-evident.

By and large, of course, most people who get into management positions are fairly bright individuals; and since intellectual endowment is practically synonymous with learning ability, even those who may lack formal training tend to learn rapidly from experience and to absorb the know-how that goes with the job.

Nevertheless, a more significant clue to executive success or failure would seem to lie in the nature of the management job itself. Most higher-level jobs are a kaleidoscope of interpersonal relationships involving associates, superiors, subordinates, as well as officials of other organizations. It is only by operating effectively in and through these relationships that the executive can achieve his job goals and realize his intellectual potential. Moreover, many of the problems confronting the executive, undefined or ambiguous as they are, can be resolved only by decisions which go beyond logic and call into play the individual's motivation, his work attitudes and habits, and his general outlook upon life.

At this level, then, job performance will bear the indelible stamp of individual "style" and personality, and success or failure in a management job cannot be accurately predicted without some insight into a candidate's personality structure.

[1] F. J. Gaudet and A. R. Carli, "Why Executives Fail," *Personnel Psychology*, Vol. 10, No. 1 (1957).

NOTE: This article has been condensed from the authors' paper which will be published in AMA's forthcoming book, *Selection of Management Personnel.*

It is these factors which make it extremely difficult to devise scientific procedures for management selection. In matching men to jobs, a management selection program must cope with two major problems: The complexity, uniqueness, and ever-changing character of the managerial job itself on the one hand; and on the other, the identification of those intangibles in the candidate's make-up which will spell the difference between success or failure on the job.

Can Management Selection Be Scientific?

To resolve these problems on a scientific basis, it is not enough to use psychological tests or even the services of a trained psychologist. If a selection procedure is to be scientific, three fundamental requirements must be met:

1. *Performance must be predicted in quantifiable terms at the time of selection.*
2. *Actual performance must be measured, independently of the prediction, after a reasonable length of time on the job.*
3. *There must be a sufficient number of cases to stabilize the relationship between prediction and performance for any given position.*

While the first two requirements can be met more or less satisfactorily at all levels of management, the third requirement—an adequate number of cases—becomes increasingly difficult to obtain as we go up the management ladder. If there is only one position in a given category, no statistical analysis of the relationship between, say, test scores and job success is feasible. Hence, in dealing with higher-level jobs, the usual approaches to testing must be modified.

One way of handling this problem is to supplement testing with the judgment and experience of trained psychologists, so that the selection decision is based upon a professional judgment rather than a statistical analysis. To make this procedure as reliable as possible, each candidate should be assessed in terms of his work attitudes, achievement drive, intellectual functioning, emotional resources, relations to other people, and other relevant attributes, and this assessment compared with the requirements of the position for which he is being appraised.

Because of its complexity, this approach requires not only professional personnel trained in assessment work but also new techniques which are capable of yielding more accurate and more comprehensive personality descriptions. Fortunately, a new set of tools which meets these requirements is now available—the projective techniques. Originally devised about 50 years ago to aid the clinical psychologist in the diagnosis of personality disturbances, these techniques are now being adapted for use with normal people and are particularly suited for use in selecting managerial personnel.

How Projective Techniques Work

Essentially, projective techniques are devices for stimulating the imagination and evoking dramatic improvisations which express the individual's personality. In the typical projective technique, the subject is presented with a more or less vague, unstructured

situation to which he must assign a meaning. Whatever the stimuli employed—ink blots, pictures, unfinished sentences, and so on—it is assumed that the way in which the individual structures this relatively ambiguous material is not fortuitous nor arbitrary but a meaningful expression of his personality.

There are, then, two underlying assumptions in the use and evaluation of projective techniques: (1) That definite motives, conscious or unconscious, are at work in determining the content chosen by the individual in his responses; and (2) that responses to material involving other people reflect his interpersonal relationships in real life.

Although it is possible to obtain some of this material by other means such as interviews and personality questionnaires, projective techniques have a decided advantage over other approaches in that they attempt to get at some of the underlying personality traits which are not readily observable. In responding to a personality questionnaire, for example, the candidate is generally quite aware of the implications of admitting "Yes" or "No" to a particular behavior trait. But even if we take his honesty and self-knowledge for granted, his responses still tell us very little about how others will see him or about those aspects of himself of which he is unaware.

In the case of projective techniques, however, it is very difficult for the respondent to understand the implications of his responses and to determine whether a particular response will advance or injure his case. With all their imperfections, then, and despite the present limited state of knowledge in this field, projective methods generally produce a less biased, less distorted, and more comprehensive picture of the individual than do other techniques currently in use.

If projective techniques and their interpretation seem somewhat esoteric, their results are nonetheless helpful in answering such practical business questions as the following: How will the candidate behave in the position for which he is being considered? What is his potential? Does he have the personality make-up to do a good job in a staff or line assignment?

Specifically, there are four important factors in job performance on which projective techniques can provide some information:[2]

1. *The maladjustment factor.*—The degree of handicap or stress under which the individual will operate—his blind spots.
2. *The degree of stress-tolerance.*—The extent to which he can handle such things as frustration, fatigue, boredom, and other pressures.
3. *The flexibility factor.*—The ease with which he can shift from one task to another with little or no loss of efficiency.
4. *The capacity-utilization factor.*—The extent to which he has learned to use his endowments and skills on the job.

Some Representative Projective Techniques

Before discussing further their industrial applications, it may be helpful to review briefly some of the projective techniques currently in use.

The Rorschach Test. One of the

[2] See Daniel Brower, "The Applicability of Projective Techniques to Personnel Appraisal," *Personnel Psychology*, Vol. 8 (1955), pp. 235-243.

earliest of the projective techniques to be introduced as a systematic diagnostic tool is the Rorschach Test developed by Herman Rorschach, a Swiss psychiatrist. Comprising 10 symmetrical ink-blot designs mounted on stiff cardboard, the test is essentially one of perception, that is, the individual is asked to report what he sees in the ink blots. The assumption is made that, since different people "see" different things, response patterns are related to differences in basic personality structure.

As a result of some unusual clinical demonstrations of the value of this technique, psychologists concerned with predicting job behavior became interested and began using it in industrial situations during the late 1930's. It was widely used during World War II by psychologists working for the Armed Forces. Often referred to as a multi-dimensional technique, the test makes it possible to get at many facets of the total personality. Of all the projective devices in current usage, it is perhaps the best standardized and easiest to score.

The Thematic Apperception Test (TAT). This technique, developed around 1930 by Morgan and Murray at Harvard University, presents a more structured task than the Rorschach. The test consists of 30 pictures, divided into four sets of cards, a set each for boys, girls, adult males, and adult females. The pictures depict various scenes, some involving one or more people, others with no people present at all. The pictures are deliberately kept vague, though in each case there is some structural core which most people recognize.

One picture, for example, is usually interpreted as a man clinging to a rope; but it is not clear whether he is climbing up or down, where he is located, or why he is there. The task, therefore, is to use the imagination to make up a dramatic story about the setting. The subject is instructed not only to create a plot but also to give the feelings and thoughts of the characters in his story. It is assumed that the characters, situations, or problems thus indicated are such as might be observed or encountered in everyday life and that, in talking about them, the storyteller will reveal his personality.

The interpretation of the stories is a highly skilled task requiring a great deal of experience on the part of the interpreter. There is no standard scoring system and a dozen or so methods for evaluating the stories are in use.

The TAT is likely to be of great value in industrial situations since more material which lends itself to personnel appraisal is generally obtained from it than, for example, from the Rorschach. Although most of the TAT scoring systems are based upon personality factors which are primarily of clinical interest, it is possible to score responses in terms of job-oriented behavior and to develop new pictures relevant to various industrial situations.

Sentence Completion and Word Association Methods. In sentence completion tests, the subject is asked to complete sentences (some 40 to 100 may be included) of which only the first words are given—for example:

¶ Bosses are . . .
¶ I like most to . . .
¶ My greatest longing is . . .
¶ Making decisions . . .
¶ Other people . . .

As with most projective techniques, there is no time limit; the individual is encouraged to use his imagination and to make as free a response as possible.

A major advantage of sentence completion is the ease with which it can be administered, scored, and interpreted. Though most psychologists feel that it is somewhat limited in scope, it is nevertheless an excellent device for screening purposes, especially where there are a large number of candidates to consider and a relatively rough measure or classification will suffice. Sentence completion is not so disguised as other projective techniques —it is more structured, for example, than the ink-blot or the picture-story test—but this makes it possible to develop items for specific industrial situations.

The Rosenzweig Picture-Frustration Study. While most projective techniques enable the psychologist to study the subject's personality in broad scope, some techniques are noteworthy because they attempt a more intensive measurement of certain areas. Such is the Rosenzweig Picture - Frustration Study, specifically designed to measure reactions to frustration. The 24 cartoon-like drawings making up this test are based upon everyday situations in which one individual is depicted as saying or doing something to another which might be construed as frustrating.

One cartoon, for example, shows someone's view in a theatre being blocked by a woman with a wide-brimmed hat; the subject is asked to imagine how the frustrated person would react, writing down the very first reply that comes to mind. This technique is relatively simple to administer and score. Although it has been little used in industry, it might be adapted to special purposes such as determining how people would react to the frustrations arising in a particular job situation.

Autobiographical and Personal History Approaches. Typical of the personal history or personal document techniques is one which consists of asking the subject to write his autobiography, giving him only vague instructions. The way in which the subject handles the task provides meaningful information about his personality.

Some valuable adaptations of this approach have been made by the Armed Forces, using biographical information blanks on which the subject, instead of writing his autobiography, checks off from a variety of choices those items which he considers pertinent to his earlier development. This type of instrument has been effective in identifying military leadership potential.[3]

A more recent development is the Worthington Personal History technique,[4] the first projective technique specifically designed for the industrial selection function. This method is based upon what appears to be a standard employment application form, structured and interpreted as though it were a projective technique. The form is designed, however, to encourage individually structured re-

[3] A. S. Levine and V. Zachert, "Use of Biographical Inventory in the Air Force Classification Program," *Journal of Applied Psychology*, Vol. 35 (1951), pp. 241-244.

[4] R. E. Worthington, "Use of the Personal History Form as a Clinical Instrument," unpublished doctoral dissertation, University of Chicago, 1951.

sponses. While specific information is called for, there are no directions to restrict the subject in expressing the information. The system relies upon a number of scoring variables. Although developed out of the psychological clinic, it has been modified and applied both in military and industrial settings.[5]

Although the personal history approach may not provide the rich material of the Thematic Apperception Test, its great advantage is that it can be used in industrial situations without appearing to be a test. As a method of intensive assessment, it has limitations; it may be developed, however, as an effective screening device because of its ease of administration and because the test responses are directly related to job and everyday-life situations.

Fitting Projective Techniques to Industrial Requirements

While there are innumerable variations of projective techniques, as well as a number of other ingenious devices not mentioned above, many of these have been confined to clinical use and do not appear to have much promise in the industrial situation. Enough has been said, however, to indicate that the stimulus to imaginative production, through which insight is gained into the respondent's personality, can come from many sources. It the final analysis, then, it is not the nature of the test materials as such which is important but whether or not the technique can be of practical value in a specific situation.

Let us turn now to a consideration of how projective techniques have been applied in the selection and placement of industrial and military personnel.

Since the Rorschach Test was most prominent in clinical work, it was natural that this approach was the first to be applied in industry. The use of the Rorschach took three basic forms: (1) intensive descriptions of job candidates which were compared with job requirements; (2) systematic comparisons of groups of people in different occupations; and (3) systematic comparisons of successful and unsuccessful members of the same group.

Most of the group studies have proved disappointing. A study by Kabak,[6] for example, revealed few significant differences in personality make-up between accountants and pharmacists. A more recent unpublished study by Hertz and Otis[7] demonstrated the Rorschach to be of little value in distinguishing good from poor salesmen. Other studies of various levels of personnel in both military and industrial settings have produced similar conclusions for the most part, although some have been more promising.[8]

[5] See for example, E. C. Nevis, "The Effectiveness of the Worthington Personal History Technique in Assessing Air Force Officers for Command and Staff Leadership," unpublished doctoral dissertation, Western Reserve University, 1954; E. C. Nevis, "Understanding Military Leadership," *Armed Forces Management*, Vol. 1, No. 4 (1955); R. F. Peck and J. W. Parsons, "Personality Factors in Work Output: Four Studies of Factory Workers," *Personnel Psychology*, Vol. 9 (1956) pp. 49-79; G. M. Worbois and L. E. Kanous, "The Validity of the Worthington Personal History for a Sales Job," *Personnel Psychology*, Vol. 7 (1954), pp. 209-217.

[6] G. R. Kabak, "Vocational Personalities: An Application of the Rorschach Group Method," Bureau of Publications, Teachers College, Columbia University, 1946.

[7] Personal communication from J. L. Otis.

[8] These are summarized in L. J. Cronbach, "Statistical Methods Applied to Rorschach Scores: A Review," *Psychological Bulletin*, Vol. 46 (1949), pp. 393-429; and A. K. Kurtz, "A Research Test of the Rorschach Test," *Personnel Psychology*, Vol. 1 (1948), pp. 41-51.

The nature of the Rorschach technique itself is probably responsible for these negative findings—it seems to be much more sensitive to differences between the normal and the abnormal personality than to differences among the general population. Moreover, the emphasis has shifted since the Rorschach first came into use.

In the earlier applications of projective techniques to business uses, psychologists tended to evaluate job candidates or incumbents in terms of their over-all personal adjustment (or maladjustment) rather than in terms of the specific behavior neccessary for success in a given position. With the development of greater job-orientation, analysis has focused on the assets, capacities, and positive strivings of the candidate, and evaluation is now a question of determining the potentiality of an individual to do a job well—even if he has some "handicaps" to overcome—rather than determining what is *wrong* with him.

Some promising studies on the use of the TAT in the prediction of military leadership[9] led the way to a major advance in managerial evaluation—the adaptation of the TAT to the assessment of the senior executives of a major corporation. In a series of investigations[10] under the direction of Dr. William E. Henry of the University of Chicago, it was found that successful executives display certain characteristic personality traits such as a tremendous desire for continual achievement, a strong need to keep moving upward in status, and a generalized apprehension or fear of failure which is translated into positive actions.

Different Approaches

The specific ways in which projective devices are now being used vary with the situation, the problems presented, and the professional position or leaning of the psychologist involved.[11] In some instances, managerial candidates are appraised solely on the basis of one or two projective techniques, without interviews by professionally trained persons and without supplementary tests of intelligence or problem-solving ability. Despite its limitations, this type of approach has been useful in many cases, particularly where relatively large numbers of candidates have to be whittled down to permit intensive evaluation of a smaller group.

In other cases, psychologists have taken the position that a more intensive assessment is necessary, on the ground that it is risky procedure to rely upon one or two projectives alone when knowledge of their effectiveness

[9] See H. A. Murray and M. Stein, "Note on the Selection of Combat Officers," *Psychosomatic Medicine*, Vol. 5 (1943), pp. 386-391.

[10] W. E. Henry, "Executive Personality and Job Success," *AMA Personnel Series*, No. 120 (1948); B. Gardner, *et al.*, "Identifying and Developing Potential Leaders," *AMA Personnel Series*, No. 127 (1949); W. E. Henry, "The Business Executive: A Study in the Psychodynamics of a Social Role," *American Journal of Sociology*, January, 1949; Henry and Gardner, "Personality Evaluation in the Selection of Executive Personnel," *Public Personnel Review*, Vol. 54 (1949), pp. 286-291.

[11] See G. J. Spencer and R. E. Worthington, "Validity of a Projective Technique in Predicting Sales Effectiveness," *Personnel Psychology*, Vol. 5 (1952), pp. 125-144; D. Moore, "The Foreman: A Personality Portrait," *Journal of Personnel Administration and Industrial Relations*, Vol. 1 (1954), pp. 60-75; L. S. Burwen *et al.*, "The Use of a Sentence Completion Test in Measuring Attitudes Toward Superiors and Subordinates," *Journal of Applied Psychology*, August (1956), pp. 248-250; and D. K. Trites *et al.*, *Psychiatric Screening of Flying Personnel: Research on the SAM Sentence Completion Test*, USAF School of Aviation Medicine, Project Report No. 21-0202-0007, 1953.

is still limited. Some authorities in this field operate with a test battery of five or six projective techniques, supplemented by intelligence tests and traditional personality questionnaires. To these tests may be added assessment interviews conducted by experienced psychologists and often of a projective nature, based upon unstructured or open-ended questions which give the candidate a chance to express himself in a rather free manner. An appraisal of this magnitude may require two whole days and is the most intensive now in general use.

A Guide for Management

More important to the business executive than the techniques used for assessment is the nature of the final report—specifically, whether the information obtained from projective techniques can be translated into simple, job-oriented terms.

Although it may sometimes be useful to know about the underlying conflicts, anxieties, or neurotic drives of a managerial candidate, what management really wants to have is a description of those behavior traits which can be recognized on the job and to which superiors can refer in working with the candidate. However skilled the projective appraisal, it is useless unless the findings pertain to factors immediately relevant to the job.

To meet this basic requirement, the writers have developed an outline for the use of projective techniques in managerial appraisal (see the accompanying exhibit). This outline can be used also by interviewers and provides the framework for the over-all report to management. By following such a guide, the skilled interpreter can translate the subject's responses into descriptions and predictions of behavior which are highly relevant to selection decisions.[12]

Another recent advance in this area is the development of the Tomkins-Horn Picture Arrangement Test. This device requires the subject to arrange a number of sets of three pictures each, mainly concerning work settings, into an order which he believes tells a reasonable story and to write a sentence about each of the pictures. More limited than the TAT in the material it produces, this technique has nevertheless yielded similar findings on the personality characteristics of executives.[13]

The Pros and Cons of Projective Tests

What are the advantages and disadvantages of projective techniques in managerial appraisal?

In the first place, projective techniques provide the most sensitive devices available—albeit far from perfect—for evaluating motivational and personality factors. Since they are sufficiently flexible to be adapted over a wide range of jobs, they have many applications and can be particularly valuable in organizational studies as well as in selection. A department or an entire management group can be evaluated, for example, and the information put to use in determining

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[12] To improve these procedures, Dr. Erwin K. Taylor is developing a scoring system for the Thematic Apperception Test based entirely upon individuals employed in important industrial positions. It is hoped that this study, which is sponsored by the U. S. Public Health Service, will result in an even more refined set of factors for evaluating normal people in everyday settings.

[13] J. B. Miner and J. E. Culver, "Some Aspects of the Executive Personality," *Journal of Applied Psychology*, Vol. 39 (1955), pp. 348-353.

Outline for Projective Analysis of Managerial Personnel

I. *Developmental Points*

1. Over-all evaluation of managerial fitness.
2. Suggestions for helping manager to become a better performer.
3. Type of incentives and supervision to which he will best respond.
4. Placement and promotion information.

II. *Work Attitudes and Habits*

1. Seriousness of work purpose.
2. Conscientiousness.
3. Ability to follow and implement instructions.
4. Efficiency under pressure.

III. *Drive and Ambition*

1. Ability to apply sustained energy.
2. Initiative and decisiveness.
3. Nature of ambitions and aspiration.

IV. *Intellectual Effectiveness*

1. Intellectual level.
2. Approach to problems.
3. Soundness of judgment.
4. Adaptability to changes.
5. Originality.

V. *Emotional Resources*

1. Emotional stability.
2. Maturity.
3. Outlook toward life.
4. Evaluation of own abilities.

VI. *Attitudes Toward People*

1. Sociability.
2. Poise.
3. Relations with customers and business associates.

VII. *Relations with Superiors*

1. Attitudes toward supervision.
2. Ability to accept orders.
3. Ability to work independently.

VIII. *Relations with Subordinates*

1. Ability to delegate.
2. Work planning ability.
3. Exercise of authority.

IX. *Relations at Own Level*

1. Ability to cooperate.
2. Skill in committee or group work.

placement patterns, job shifts, and promotion potentials.

An additional virtue is that these tests, being less transparent than most others now in use, make it more difficult for the candidate to put himself in the most favorable light or to demonstrate characteristics which are not really typical of his performance.

While these advantages are undoubtedly of great practical importance, there are some disadvantages to be taken into account.

The time and cost involved are important considerations, of course. Insofar as the candidates are concerned, the time needed to complete a projective test is not excessive—administration of the TAT, for example, generally takes from one-and-a-half to three hours. More time is required if other techniques are added, but even two days of a manager's time is not excessive in view of the need for a thorough appraisal at this level. The significant cost is the time required by a skilled professional to do a comprehensive interpretation—the interpretation of the TAT alone takes from two to six hours of careful analysis.

This cost, though highly visible, is not excessive. If the use of projective techniques in selecting management personnel can help to screen out only one individual who would otherwise go on the payroll (or be promoted to a position of greater responsibility), perform unsuccessfully for a year or so, and then have to be released, the savings realized would actually pay for dozens of other appraisals. Since hiring or promoting a member of management constitutes a substantial investment, usually running into six figures, the cost of projective techniques seems more than reasonable by comparison.

Although the subject's reaction to the test may pose a problem, most job applicants seem to have accepted the proposition that the company is doing its best to fit them into the right position for their sake as well as for its own—in fact, they may even be somewhat flattered by this evidence of management's interest in them. They seem to enjoy the free rein that projective techniques afford. In any case, whatever anxiety may arise, the test situation is no more threatening to the applicant than an interview with the sales manager or a vice president or any other company official.

Interpreting Results

If neither the administration of projective devices nor their acceptability to the applicant creates any real problems, the same cannot be said with respect to the interpretation of results.

Unlike the familiar pencil-and-paper tests of personality, projective techniques have no scoring stencils or tables of norms that can be handed over to a clerk for mechanical scoring. Furthermore, any single response of the subject to a projective test gains its full meaning and value only in connection with all his other responses; and, in the final analysis, it is the interpreter who must use his judgment in assigning the proper weight to a given response and in combining these responses into a cohesive picture of the candidate's personality.

The value of projective tests is therefore in very large measure a function of the technical training, the skill, and the orientation of the analyst. Certainly analysis is not a task to be under-

taken by any amateur who has read a book or two on the subject. The analysis must flow from a comprehensive understanding of personality theory, a thorough knowledge of job requirements, considerable familiarity with the management structure of the organization involved, and broad experience in industrial selection problems at the managerial level.

Indeed, the major problem is probably the scarcity of qualified analysts. Since it is only within the past few years that serious efforts have been made to employ projective techniques in the selection of industrial personnel, few bona fide industrial psychologists have been trained in projective analysis, and few experts in projective analysis have had industrial experience. For the most part, the colleges and universities treat projective techniques as tools to be used in the diagnosis of mentally disturbed people, and the reports of clinical psychologists are usually more suitable to the mental institution than to the personnel office.

In any event, the results of projective tests in no way relieve management of its prime function—making the decision. They constitute merely an addition to the pool of data required for decision making, together with the results of other psychological tests, professional and management interviews, performance appraisals, medical examinations, work and educational history, references, and so on.[14]

It is obvious enough that no candidate for a management job will meet *all* the requirements of the position for which he is being considered, nor is it likely that any candidate who has successfully negotiated the preliminary hurdles of selection will be completely unsuited for the job. In greater or less degree, then, every candidate represents a calculated risk.

Some Safeguards in Using Projective Techniques

It is only to be expected that operating management should constantly be in search of a shorter, less expensive, and more efficient means of accomplishing the assessment task. The fact remains, however, that there are no short-cuts in this area and the tendency to cut corners, understandable as it is, may spell the ruination of an otherwise effective program. In a study by the authors of one company's selection program, for example, it was demonstrated that the average tenure of salesmen selected through the use of the *complete* program was substantially higher than that of men hired on a short-cut basis.[15]

Both men and jobs are complicated. The process of fitting one to the other, particularly at the management level, is necessarily an involved one, and the science of human measurement has not yet reached the point at which it is possible to turn a crank and come up with the right answers. The best that we can hope to accomplish under present circumstances is to increase the probability of a successful placement. Projective devices can help in the accomplishment of this goal, but their use does not substantially reduce the contribution that can be made by

[14] These points are discussed in H. H. Meyer and J. M. Bertotti, "Uses and Misuses of Tests in Selecting Key Personnel," PERSONNEL, November, 1956.

[15] E. K. Taylor and E. C. Nevis, "The Validity of Using Psychological Selection Procedures," PERSONNEL, November, 1953.

other techniques nor obviate the need for improvements.

At this stage of development, a well-rounded approach seems to offer the highest probability of success. In addition to projective devices, such an approach would incorporate personal history and background information, psychological tests in the areas of intelligence, special aptitudes, and proficiency: as well as work-background and projective-type interviews by trained and qualified interviewers. The use of several psychologists in each appraisal is advisable.

Since interviewing and projective analysis both involve a sizable subjective element, they should be performed independently of each other. The analyst should have no personal contact with the applicant and should base his report exclusively upon the projective material produced. The interviewer, when meeting the applicant, should have access neither to the test scores nor to the projective analysis; if multiple interviews are employed, each interviewer should commit his observations to paper before any discussions concerning the individual take place. It is only by maintaining this independence that the maximum contribution of each assessment tool can be fully realized.[16]

Even a multi-technique approach to managerial selection, desirable as it is, has prediction value only in specific instances. There is no such thing as general validity—test findings can be interpreted only in the light of detailed knowledge and understanding of the factors that have a bearing upon executive performance in a specific job-company atmosphere. Hence it is necessary to give greater attention to the task of determining job and man specifications—as well as standards of acceptable performance — at those levels where selection, promotion, or transfer are at issue.

Conclusions

Unfortunately, there have been few quantitative investigations of the effectiveness of projective devices or, for that matter, of any of the other techniques of personnel assessment. Consequently, most of us who are active in this area have to proceed on the basis of our best professional judgment.

All too often, we do not know how effective projective devices actually are. Nor can we say—unless on the basis of hunch, prejudice, or individual intuition—which are most appropriate to given problems and which are not useful at all. In short, personnel assessment is at the moment much more of an art than a science.

If assessment techniques are to be improved, it is essential that predictions be made at the time of assessment which can be compared, after a period varying from six months to several years, with actual performance on the job. Industry must cooperate by insisting that its psychologists have a definite, systematic, and technically competent program of research[17] to measure the effectiveness of their pro-

[16] See for example, D. B. Stuit, *Personnel Research and Test Development in the Bureau of Naval Personnel*, Princeton University Press, 1947; and E. L. Kelly and D. W. Fiske, *The Prediction of Performance in Clinical Psychology*, University of Michigan Press, 1951.

[17] An example of this kind of research is reported in A. C. Hilton *et al.*, "The Validity of Personnel Assessments by Professional Psychologists," *Journal of Applied Psychology*, Vol. 39 (1955), pp. 287-293.

cedures; by supplying the assessing organization with performance evaluation reports on individuals after placement; and by paying its share of the cost either directly or indirectly. Without continued research, improvements, if any, will result only from rare, happy accidents. Sound research, on the other hand, can be expected to eliminate from appraisal procedures those elements which are non-functional or even misleading, and to provide valuable insights which may lead to the invention of better devices, to simplified procedures, and to shortening the time required to perform appraisals. Management's investment in research will thus be repaid many times over in faster, less expensive, and more accurate assessments.

Can Engineer Turnover Be Reduced?

THE HUE AND CRY over the shortage of engineers has obscured the fact that engineers are changing jobs at an increasing rate. Last year, for example, 15 per cent of the engineers employed in the avionics industry quit their jobs to take new ones, points out *Industrial Relations News*.

Engineer turnover has shown a steady uptrend since 1953. According to the most recent comprehensive survey, conducted in 1953, turnover was over 8 per cent in electrical and non-electrical machinery, research, development, and consulting; over 10 per cent in professional and scientific instruments; and nearly 13 per cent in transportation equipment. By comparison, during the same year, the turnover rate for manufacturing as a whole was only 4.3 per cent. And spot surveys conducted by *Industrial Relations News* in companies employing substantial numbers of engineers show a steady increase in engineering turnover over the past three years.

Engineers are generally credited with being an unusually stable body of professionals. When, therefore, the engineer quit-rate reaches its present high level, there is apparently something seriously wrong with the way in which management is handling its relations with this vitally important group.

Why do engineers quit? The prospect of a higher salary may often be the occasion for quitting, but it is seldom the only reason, or even the major one. For the most part, they leave because management has not seriously demonstrated that its engineers are as important as it continuously claims they are. A recent survey of practicing engineers revealed that only 24 per cent felt that management recognized the engineer as a professional; only 22 per cent felt that they were of importance to their company; 37 per cent felt that the personnel policies of management did not make the best use of their professional contribution.

. . . Most personnel workers will agree that the standards whereby we gauge a candidate's fitness for a particular job are often imprecise, if not downright faulty. How can we develop more reliable measures to guide our selection decisions?

Personnel Standards: A Key Problem in Selection and Placement

JOICS B. STONE

California Test Bureau

AT THE PRESENT TIME, personnel selection and placement are based on two major assumptions: (1) There are fundamental differences between persons in one occupation and those in another—e.g., carpenters are fundamentally different from accountants; and (2) there are fundamental differences between those who succeed in a given occupation and those who do not—e.g., successful salesmen are fundamentally different from unsuccessful salesmen.

It is well to remember that both these assumptions are working hypotheses whose validity has never been adequately tested. Nevertheless, they underlie every decision we make in hiring, placement, and promotion.

In other words, from the belief that a particular job calls for a particular assortment of personal attributes and skills, we proceed to specify what kind of person we need to fill it. In so doing, we immediately invoke a set of *standards*, since without standards there can be no specifications.

Standards, then, are the guideposts for selection decisions. All selection devices—whether they be psychological tests, interviews, application blanks, reference checks, or the boss's personal opinion—are simply a means of gauging how closely the candidate meets the standards that have been laid down for the job.

It follows, therefore, that the selection devices, however efficient they may be as measuring instruments, can be no better indicators of success than the standards predicated in their use. If our standards are vague or inexact, or are too narrowly drawn—if, for example, we ae concerned only with identifying a particular aptitude or skill and ignore the other vital com-

ponents of performance on the job—we should not be surprised if the predictive efficiency of our selection apparatus turns out to be a good deal lower than we had hoped.

Most personnel people are aware of this problem, implicitly if not explicitly. As we all know, even the most systematic selection procedures can lead us wildly astray. When that happens, the tendency is to blame the instruments. Actually, it may well be not the instruments but the standards which are at fault. In our use of standards, we are very often, to all intents and purposes, groping our way with a white cane.

Characteristics of Standards

What can be done about this state of affairs? How can we develop better personnel standards than those we now use? Before we can answer this question, we must first understand what an acceptable standard is.

All standards, however derived, must meet certain criteria. These include *some degree of:*

1. Objectification of subjective judgment.
2. Stability.
3. Verifiability.
4. Accuracy.
5. Applicability to the situation at hand.

Let us consider each of these criteria in turn.

1. ***Objectification of subjective judgment.*** Every standard, whether temporary or permanent, originates in the need to evaluate something. In other words, a standard represents a value-judgment; and, in the final analysis, all value-judgments are subjective elements, that is to say, they are products of thought. Hence, if they are to be applied in several places or at several points in time, they must be translated into some communicable form. Standardization, then is the process of objectifying and communicating subjective judgment.

Ideally, of course, a standard should objectify all the subjective elements that influence our interpretation of it. Thus, if we decide that, to fill a particular opening, we need an employee who is not less than 5 feet 10 inches tall, we have at our disposal a standard measuring scale that completely objectifies the evidence of our eyes in assessing the height of the various candidates who apply for the job.

A moment's thought will show that the standards we use in personnel work vary considerably in their degree of objectification. In this respect, some—such as measures of height—are well standardized, whereas others—such as "emotional maturity," "success on the job," and so forth—are far from well standardized.

2. ***Stability.*** Inasmuch as our selection decisions must depend upon our standards, it is essential that, when we use them, we know their degree of stability. The standards by which we measure linear dimension are so important that we not only describe the unit of measurement in terms of distance along a rod of specified composition, under specific conditions of temperature and pressure, but even go so far as to maintain a physical sample of the standard in a government laboratory. If conditions of temperature and/or pressure were allowed to vary, the standard of linearity (as embodied in the rod) would also vary, and decisions which did not take this vari-

ability into account would miss the mark accordingly. We cannot maintain such a degree of stability in personnel standards, but we are no less obligated to describe the conditions of variability and the influence they produce on the standards we use.

3. *Verifiability.* In addition to being stable, a standard must also be verifiable. That is to say, if we establish a standard under one set of conditions, can we expect the same standard to be drawn from the same, or similar, conditions at a later date?

4. *Accuracy.* Though, to be sure, accuracy depends upon stability, the two are not the same thing. A constant error may persist in one's judgment, but this constancy will not affect the stability of the standard employed. However, we certainly cannot claim that the constant error leads to accuracy, except in so far as we are able to correct for it and thus become accurate. We can say, however, that where accuracy is established, verifiability, stability, and objectivity can be enhanced.

5. *Applicability to the situation at hand.* Since any standard is an abstraction, it is important for us to know how far this abstraction is removed from the "reality" with which it is concerned. We are also interested in knowing the extent of this "reality." Thus, for example, a standard of honesty will depend upon circumstances —what may be considered "honest" under one set of conditions might be construed otherwise under another set. The use of any standard presupposes that it is related to the situation for which a decision is to be made. Hence, it is imperative that we be assured of the applicability of our standards. We obtain this assurance from a demonstration that the standard we are using is actually related to the operation with which we are concerned.

Origins of Personnel Standards

If few personnel standards meet all the criteria that have been enumerated above, the reason becomes plain when we consider where our standards come from. In general, personnel standards spring from three main sources:

1. Thin-air origins.
2. Armchair origins.
3. Empirical origins.

1. *Thin-air origins.* Many of the standards we use are derived from thin air. Born of the moment, they seldom meet the test of reality and disappear as rapidly as they sprang up. Most of us can remember how, in our college days, our standards of a desirable social companion often varied from one moment to the next. Though, admittedly, such fluctuations in values are characteristic of immaturity, most of us can find one or more areas in our decision making where our values are just as immaturely derived and just as unpredictable in their influence as were our youthful enthusiasms for one boon companion after another.

2. *Armchair origins.* We begin to exhibit maturity in our system of values when we move first to *suspended judgment* and then to *considered judgment.* Suspended judgment is the deliberate attempt to avoid snap decisions or being stampeded into action. Considered judgment is the process of bringing thought to bear

on the decision required. This permits us to do our best thinking, to solicit opinions from others, to weigh the balance, and to form as sound standards as we can. Suppose, for example, we had to select a production manager. First, we would try to set down what we thought he should be like. Then we would ask all others concerned what they thought he should be like. Pooling these opinions, integrating the data, and meditating about them to provide a standard to use in finding the right man illustrates the armchair method at its best.

3. *Empirical origins.* Both thin-air and armchair judgments utilize the best thinking that is available at the moment when a standard is required for decision making. But it must be remembered that, however logical the actual thought process may be, the quality of the "mental furniture" available for thinking is vital to the subtance of the value-judgment obtained. To derive a standard according to the rational principles of idea interrelationships is of little avail if you start out with faulty ideas or pseudo-facts. If you proceed from the premise that all men who wear mustaches have deep-seated inferiority complexes, you may then have logical grounds for refusing to hire any man who wears a mustache. But your premise, certainly, is not demonstrable in fact. This, then, is the test of our judgment: *Does it hold up in fact?* The relationship of our value-judgment to the facts calls for demonstration by the empirical approach in which we gather evidence and establish our standards accordingly.

Since psychological test standards are to varying degrees empirical in origin, it is reasonable to suppose that they are more "reliable" than the standards we derive from thin air or armchair thinking. Actually, however, their application entails a number of pitfalls of which all users of psychological tests should be aware.

Problems of Psychological Test Standards

Psychological test standards are usually cast in the form of "norms." Perhaps a quick look at the various kinds of norms will point up the problems they pose.

National norms. In using national norms, we need to be certain that the group on which the norms are based is in fact representative of the nation as a whole. "National" is not a function of the size of the norm group. One thousand well-selected cases will provide norms that are more representative nationally than 100,000 poorly selected cases can. If we are interested in national standards, we must be assured of proper sampling to provide this representativeness. We must remember that numbers are not enough.

Occupational norms. These are the standards applicable to a selected occupational group. Here, again, mere numbers are not enough to assure a valid sample. Nor is it sufficient to classify an occupation in general terms, such as physicians, bookkeepers, laborers, and so forth. Ideally, we should have a job description of the functions included within the occupation used for our norms. At all events, something more than a cursory description of the norm-group is needed to help us determine how far the

norms are applicable to the situation for which we wish to use them. Too often, however, occupational norms are sporadic in their representativeness of the occupation they purport to reflect.

Integrated norms. Frequently, personnel workers desire integrated norms, but are forced to proceed without them. As a typical example, let us say that Company A uses a short intelligence test with norms based on 3,000 general population, a dexterity test providing norms on 465 machinists, a spatial relations test based on 320 junior engineers, and a measure of emotional maturity based on 1,000 normal male adults. Company A uses these various norms to screen applicants for utility production servicemen. In so doing, it assumes a comparability of norms which has not been established in fact. The personnel worker has falsely integrated the norms.

Integrated norms are established by giving all the tests to the same sample. We can then compare the relative level of performance from one test to another. But we certainly cannot make such comparisons by relying on our statistical transformations. It must be remembered that our statistical comparisons can be no better than the original data (the norm groups) with which we began.

Local norms. To circumvent the problems inherent in national, occupational, and integrated norms, there is a growing tendency to develop local norms. Thus Company A, instead of relying on the norm groups described above, will establish its norms on the utility servicemen within its employ. One may interpret them *within* that context; but they cannot be interpreted outside of it—within another company, say. Local norms are long on specificity (intra-company), but short on generality (inter-company).

One Research Approach

From the foregoing discussion, it will be apparent that our basic assumptions—that there are differences not only between carpenters and accountants but between "good" and "poor" carpenters and between "good" and "poor" accountants—have hardly been standardized to the point where we all know their degree of objectivity, stability, accuracy, and so forth; to what extent they are grounded in fact; or how far they represent a true integration of all the factors that must be taken into account in arriving at a selection decision.

Innumerable studies have been made on specific tests or types of tests and on specific occupations or occupational families. As long as we confine ourselves to this piecemeal approach our standards are bound to remain tenuous and misleading. To establish firm standards, whether they be intra-company or inter-company, intra-occupational or inter-occupational, we need a broad-based study of occupations. Only through such comprehensive research can we accumulate the integrated body of evidence we need.

One promising example of this integrated approach is the Industrial Norming Project of the California Test Bureau. In the summer of 1956, the Bureau undertook the task of administering a comprehensive series of test batteries covering five areas—

mental ability, aptitudes and basic skills, dexterity and coordination, motivation, and temperament—to approximately 1,000 employees in each of 10 major occupational groupings. Rating forms for each employee tested were supplied to the participating companies, to afford inter- and intra-group comparisons.

Though a detailed report on the project is not yet available, some idea of the value of this multi-dimensional, integrated norming approach may be gained from the data obtained on 1,358 employees in one company. The employees fell into five broad occupational groups: (1) supervisors, (2) skilled workers, (3) semi-skilled workers, (4) salesmen, and (5) clerical workers. Following are the main features pointed up by the findings:[1]

1. On some of the test variables, there was no great difference *between* groups, each compared with the other. This was apparent in some of the temperament test variables.
2. On some variables, the differences *between* the groups were rather pronounced. Several of the occupational interest variables showed this discriminating power, as did many skill and ability variables.
3. The prediction of occupational success was not uniformly efficient from group to group. Three moderately efficient validity coefficients (.200 or higher) were found in Group 1, three in Group 2, two in Group 3, two in Group 4, and three in Group 5. This points up the fact that the use of single test variables in predicting success on the job is not as productive as we should like.[2]
4. The various tests were not uniformly efficient in their prediction of occupational success. The mental ability and aptitude tests produced three validity coefficients of .200 or higher; two of the occupational interest coefficients met that criterion, and eight of the temperament coefficients. This would seem to indicate that whereas the temperament variables were not the most efficient in discriminating *between* groups, they were the most efficient in discriminating *within* groups.
5. The more specific the group for which success is being predicted, the greater the likelihood that the most efficient prediction will obtain.
6. For test variables that show pronounced inter-group differences, the use of specific norms may be advisable. But for variables in which inter-group differences are negligible, specific norms can scarcely be justified.
7. With the development of company norms, interpretations of percentiles or of standard scores on the several tests take on considerable stability. The norm group for each variable in this example is the same, namely, 1,358 workers in this company.
8. The data of this study are specific to the company in question. Through comparisons with the other data in the Industrial Norming Project, a more generalized statement may be possible about test performance from occupational group to group or from company to company.

It should be re-emphasized that we are not justified at present in generalizing beyond this example. When all the findings of the project have been analyzed and compared, we may have a clearer picture of the extent to which our standards can be generalized. The example cited may serve as an indication of the rigorous investigation needed if full reliance is to be placed on the standards used in personnel activities.

[1] The analysis which follows is derived from the mean test scores, standard deviations, and correlations of each test variable with the composite ratings on each testee.

[2] Further analysis showed that, by combining several variables into a multiple regression equation, the predictive efficiency of variables which, singly, were not too productive was generally materially increased.

In the present state of our knowledge, the following suggestions would seem to be in order:

1. Extreme caution must be exercised in using norms in personnel selection and placement, particularly in spurious integrating of the norms.
2. Since subjective criteria (e.g., the boss's opinion) usually prevail, every effort should be made to objectify these criteria.
3. In the use of psychological tests, conservative expectations—and claims—are called for.
4. The same conservatism should prevail in the use of all other selection devices. The ordinary employment interview, for example, has rarely been shown to have a predictive efficiency of much more than 5 per cent—and many of the other aids to decision, such as college grades, references, and the like, are often less efficient.

Union Participation in Layoff Procedures

ALTHOUGH IT IS invariably a management responsibility to determine when layoffs are necessary, many unions participate in layoff procedures either informally or under the terms of the union-management contract. Of 1,347 major collective bargaining agreements containing layoff clauses, the Department of Labor found that 245, covering over 1.5 million workers, provide for some kind of union participation in handling layoff problems.

The degree to which unions participate under the terms of these contracts varies considerably. In some cases, joint agreement is required—that is, the consent of the union to management's proposals; in others, management is enjoined merely to consult or negotiate with the union. These specifications may apply to all procedural problems arising in layoffs or only to certain aspects such as rescheduling work time, transferring employees, or reviewing the lists of those to be laid off.

One of the most important devices for preventing or minimizing layoffs is the reduction of hours in order to share the available work. In most cases where the contract provides for reduction in working time in lieu of layoffs—over one-fourth of the 1,347 agreements contain such clauses—the union has a voice in establishing policy either when the contract is negotiated or when layoffs are imminent.

Aside from the specific provisions regarding layoffs, the grievance clauses contained in most major agreements serve to safeguard the union's right to challenge management action and may open other avenues for unions to participate in layoff decisions.

. . . Selection procedures that probe no further than a man's aptitudes and skills may overlook some vital clues to his potential success as a supervisor.

Some Neglected Aspects of Supervisory Selection

FRANK J. JASINSKI

Technology Project
Yale University

MOST PERSONNEL MEN are well aware that, even with the newest techniques at their disposal, selection procedures are far from infallible. The importance of a continuing program of evaluation long before promotion is contemplated has been stressed many times—yet, when an "emergency" arises, this sound advice is all too often thrown to the winds. This article will, it is hoped, illustrate some of the pitfalls of filling supervisory vacancies on an "as needed" basis.

The findings reported here are drawn from the Yale University study of 200 automobile assembly-line workers at Plant "Y"[1] and a follow-up investigation by the author.[2] After the larger study was completed, a second shift was started at the plant and 21 of the line operators were promoted to foremen. The author interviewed a number of these new foremen—the same men he had talked to the year before, when they were hourly workers—to find out how they were adjusting to their new positions. What kind of men were these whom management had singled out for supervisory jobs? Had their outlook changed as a result of their new status and the training they had received?

At the outset, it must be said that there was no clear-cut, concise picture of a foreman's job at Plant "Y." When foremen themselves were asked to describe their responsibilities and

[1] For some earlier reports on the long-term Yale Technology Project, which is under the direction of Charles R. Walker, Director of Industrial Relations and Technology, Yale University, see A. N. Turner, "What Makes a 'Good' Foreman?—The Worker Speaks His Mind," PERSONNEL, March, 1955; R. H. Guest, "Men and Machines," *Ibid*, May, 1955; and F. J. Jasinski, "Human Relations Training: The Missing Link," *Ibid*, May, 1956.

[2] As part of his study, *Status and Role of Assembly-Line Foremen*, unpublished doctoral dissertation submitted to the Department of Anthropology, Yale University, 1955.

authority, their conceptions of their job were vague and varied. General foremen and superintendents were equally nebulous in their statements. They said that they knew when a foreman exceeded his authority or fell short of it, but they could not give any explicit account of even the ideal patterns of behavior they thought a foreman should follow.

The Selection Procedure

In earlier years, management at Plant "Y" had relied on the "hunch" or "sink-or-swim" method of foreman selection. A general foreman would pick the most likely candidate from the hourly ranks and make him the replacement foreman. Sometimes the incumbent foreman's opinion was solicited; sometimes not. If the new foreman proved unsatisfactory, he was permitted either to resign, or to return to the hourly ranks. Later, management became more systematic. The company engaged a consulting psychologist who administered a battery of tests and made recommendations on the candidate's suitability for a supervisory job.

In actual practice, when the time came to select a group of foremen for the second shift, this—according to one of the general foremen—is how it was done:

> ¶ What we did first was to screen the utility and repairmen. We gave them all aptitude tests. Sometimes men had high marks on the tests, but we bypassed them because they lacked other qualities. They couldn't stand the pressure. They just couldn't handle the job. Then we got the old timers who looked as though they could handle the jobs. . . . Those who said they were interested took the aptitude tests. Then we put those who had good grades on as foremen.

The examinations, which took several hours to administer, were fairly standard. Three major areas were tested: knowledge, interests and personality. Knowledge included tests of general ability, shop mathematics, mechanical comprehension, space relations, ability to supervise, and understanding of human relations. Interests were grouped under the following heads: outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical. Aspects of personality which the tests purported to measure were general drive, restraint, ascendance, sociability, emotional stability, objectivity, friendliness, thoughtfulness, personal relations, and masculinity.

The scores had been validated for foremen in related and similar industries and presumably could distinguish, to some degree, between candidates who had qualities corresponding to those of successful foremen and those who did not.

The selection process took little or no account of the candidate's personnel records. Analysis showed, however, that the average new foreman had at least 10 years of education, was 36 years old, had been with the company for 15 years (three of which he had spent as a utility man or repairman) and had been in supervision before. (It should be remembered that schedule fluctuation rather than individual merit could have been the reason for his reduction to the hourly ranks.) Most of these new foremen had received high performance ratings throughout their service at the plant.

Theoretically, the selection was made by the general foreman, with

the superintendent's concurrence. Presumably, the general foremen were reasonably well acquainted with the abilities of the line operators. Yet among the men who became foremen, the interviews revealed that there were only a few who had had much contact with their general foreman, let alone the superintendent—the two people on whom the decision rested —when they were hourly workers.

Eleven of the new foremen reported what their contacts with the general foreman had been as workers. Three said they had spoken to him once a day; three had spoken to him more than once a week, but not every day; one said he used to speak to his general foreman once a week; two, once a month; and one, once in six months.

The superintendent had been even further removed from the world of these new supervisors when they were hourly operators. Two said they had never spoken to him; one said he had done so almost every day; two had been in contact with him more than once a week, but not every day; four had seen him about once a month; and three said that they did not see him for six months at a time.

From all indications, therefore, the general foremen and superintendents did not have close, first-hand knowledge of the 21 workers who became foremen. (In the larger worker study, the average hourly operator had some contact with general foremen once a week and less frequently with the superintendent.) Whatever subjective estimates were made of an operator's suitability for a supervisory job must thus have come from the worker's immediate supervisor, the foreman.

In other words, the members of management who were officially responsible for the selection of new foremen had only limited contact with the candidates themselves.

Dissatisfaction with the Selection Procedure

There was considerable feeling among general foremen and superintendents that this method of selecting foremen was not as satisfactory as it might be.

In support of this contention, they pointed to a number of shortcomings —inadequate preparation for supervisory responsibilities, the lack of knowledge among the new foremen of the way in which their section fitted into over-all operations, inadequate experience, the company policy of transfering new foremen to unfamiliar sections, and so on. Further analysis showed, however, that underlying many of the difficulties the new foremen were experiencing was their negative attitude to the job and to the company.

As one general foreman put it:

> ¶ The new foremen just don't feel part of management. They're afraid of the time they may have to go back to the line. They don't want to pick on anybody. They also have the attitude that they can always go back to hourly. I've had one man tell me right to my face that if I didn't like the way he was doing his job, to put him right back on hourly. The new men just don't come up to the job. They just don't realize that they are part of management and should follow the rules set down by the corporation. The old men are adopting the "let-it-go" attitude the new men have. I guess it's only human, but it's not good.

As has been said, the new foremen

had been interviewed when they were hourly workers, in the course of the larger Yale study. What did they have to say then about their jobs, the company, and their hopes for the future?

What They Thought of Their Jobs

More than half the workers who eventually became foremen felt that their jobs were interesting. Two of this group made the statement without any qualifications; the remainder pointed out that their particular jobs were more interesting than regular assembly-line jobs:

¶ It's not as bad as on the line. I would prefer a job where I would have to use my brain.

¶ Personally, I think that working on the line is the most monotonous thing there is. No intelligence is involved, and it isn't interesting. It's like digging a garden over and over again all day long. I can move around and it's not boring.

Some typical less favorable comments were:

¶ I don't like it at all. You can't move away from the job. You are tied to the spot as surely as though you had a ball and chain. It's monotonous and not a bit interesting in any way.

¶ Sometimes I get so mad I hit the car with my fists and I swear at it, and I throw my tools at it.

What They Thought of the Company

In seeking to identify the workers' attitudes toward the company itself, it seemed advisable to explore four questions: Why did the men come to work for the company? Would they leave, given the opportunity? Why had they stayed? Did they think that the company did all it could for the employees?

None of the men said that they had come to Plant "Y" because they wanted to make automobiles or they thought they might learn particular skills. The specific reason given by 20 out of the 21 was that the plant offered higher wages. Most of them added, however, that the monetary advantage formerly held by Plant "Y" in the area had since been lost.

¶ Years ago, up to 1941, we were the highest paid in the state. Nobody would leave Plant "Y" no matter how hard we worked. Now, a laborer in the oil companies gets almost as much to start as the top man in Plant "Y" is getting.

When asked if they would leave, all but one of the future foremen said that they would. They did make certain stipulations about their next job. The most frequently mentioned condition was that the job should not be on an assembly line and should pay about the same. Two men said that they would leave for less money if the job were satisfactory in other respects.

¶ I would leave for a comparable rate of pay, just out of general disgust.

¶ I would go out, absolutely. The line is no place for a man to work. . . . They expect too much of you at Plant "Y." You're always on the go. Can't take time out for a cup of coffee or smoke a cigarette. You have to take relief when they give it to you. You've got to rush in and rush out. You can't live a normal life. I'll bet if they checked every foreman for his health, they'd find he had ulcers.

Why did they stay at their jobs? Security in one form or another was the reason most frequently cited by this group. Six mentioned seniority; three, responsibilities and fear of taking a chance; and one, the pension.

Five of the group gave money as their reason, while two said that they had no other skill. One man liked the vacation plan and another said that he had no chance as yet to get a job elsewhere.

In discussing whether the company did all it could for its workers, only four of the group manifested what might be termed favorable attitudes:

¶ It isn't a bad place to work. It gave me bread and butter for 15 years. Even in the old days, we made as much in 9 months as the average man made in 12, so you were actually on a vacation.

Some expressions which might be termed favorable suggested more a grudging admission than a clear-cut, positive attitude:

¶ The company does something at times, but you have to keep after them, or they forget about you.

More than 80 per cent of the group, however, held and expressed unfavorable attitudes toward the company:

¶ I would say that they don't do anything they don't have to do. All the stuff we've got is there because the law says we've got to have it, but as far as making things pleasanter and more cheerful, they don't do it. Here they just want you to do the job, and when you can't do it any more, they get somebody else.

¶ That company will not do anything for the men. The company makes millions on the sweat and blood of the men.

¶ They don't know their workers. We're just a number in a book. There's no recognition, no chance for advancement. They don't use a man's mind, and overwork his body. They seem not to care whether or not a man stays. They'd rather get new men to use up every year. Human beings have no value.

What hope of advancement did these future foremen have when they were hourly operators?

Their Outlook on the Future

Each man was asked what particular job he would like most and what he thought his chances were of getting it. Only four of the 21 expressly said that they would be interested in a supervisory position. Eight indicated no preference for any job, either because they felt that all jobs were distasteful, or because they had never considered the possibility. Of those who did indicate a preference, two expressed interest in inspection jobs, two in off-line bench jobs, and one each in maintenance, salvage and engineering. Two men said that they were more satisfied with their present jobs than they would be with any other production job that might be offered them.

Only one of the 21 expressed any hope of getting the job he liked:

¶ As far as production jobs go, I'll take my own job over any of them if you don't include relief men or utility men. I would like relief or utility because it's a push up the ladder. I've always thought I had a chance for advancement there.

The remainder of the group were much less optimistic, and even downright pessimistic:

¶ You don't have a chance (*to get a higher job*). . . . You got to know somebody. They bring in guys from outside for foreman jobs. . . . I don't know anybody big in the company.

¶ There's no chance of getting it (*nonproduction job*), and if you ask for a certain job, you can be sure to get any other job in the place but that one.

¶ As far as getting any job you want around here, you have to have drag.

When you reach a point where they don't want you anymore, they try to make it hard for you. Instead of placing you in an easy job, they keep you plugging in the same job until you can't go any more.

¶ That's a joke (*getting a desired inspection job*). If my general foreman knew I had designs on an inspection job, he would personally gouge out my eyes, so I couldn't inspect my own fingernails.

Such were the men whom management at Plant "Y" selected for supervisory positions. More than 80 per cent held unfavorable attitudes toward the company. All but one would have left, if given the opportunity. Security and financial reward were their main reasons for staying on the job; less than 20 per cent thought that the company did anything for its employees.

With one solitary exception, these men were totally pessimistic about the future, both as regards their chances of advancement and their ability to maintain the pace demanded by the moving conveyor. Although 20 per cent expressed a desire for a supervisory job, only one man felt optimistic about becoming a foreman.

Attitudes after Promotion

As has been seen, the selection procedure made no attempt to gauge the candidates' attitudes. Did the fact of their becoming foremen bring about any improvement in their former outlook? To the contrary, many general foremen and superintendents found that these negative attitudes "carried over" and constituted an important and integral part of the way the new foremen performed. In many ways, they prevented a satisfactory adjustment to the new job.

Here are the same men talking after they had been promoted to foremen:

¶ Foremen are here today and gone tomorrow and no one ever knows what happened to them and why.

¶ A foreman has no security at all. The worker has bargaining as far as the union is concerned. As far as the foreman goes, he's here today and gone tomorrow. You know when they approach a worker and ask him to become a foreman, he can't see any advantage in becoming one of supervision. In the first place, he loses his protected position. If the foreman's immediate superior doesn't care for him particularly . . . he can put him on the unemployment rolls.

¶ I'll probably go back to the hourly ranks as soon as a cutback (in production) comes.

This feeling of insecurity was reinforced by the behavior of the foremen's superiors. Foremen didn't know where they "stood" personally, they hesitated to ask questions or to seek help, and they recognized that it was best to follow the lead of their general foreman even though it was contrary to their own inclinations and the precepts taught in training classes.

¶ You never know where you stand.

¶ The department superintendent does call meetings of the whole department and asks the supervisors where their trouble areas are. None of the foremen ever speaks up. I never do. The feeling is that if you bring up a problem and show that you can't handle your section you might be fired because you can't handle the job and work under pressure.

¶ These training courses [are] . . . educational . . . but back on the floor we can't use the stuff they teach us. The only reason for that is that the men who are higher up are from the old school and they work a certain way and you have to go along with them. . . . The attitude that the higher-ups have—and they're the old type

foremen—is, "Either you do your work or get out." . . . I think that the one very definite step that should be taken is getting rid of higher supervision that does have that attitude so that the foremen can start using some of the things taught in training class.

Some members of middle management recognized that the new foremen didn't feel that they were part of the management team. They cited "let-it-go" attitudes which not only kept the new foremen from performing adequately but were also spreading to the older foremen as well.

A few of the new foremen readily admitted to this shortcoming. One foreman, typical of most, said:

¶ I don't want to raise a fuss because I don't know how long I'm going to be on as a foreman, so I just let it go.

In adjusting to their positions, the new foremen often circumvented company regulations and policies—usually in favor of their subordinates. The following comments about the suggestion program are representative:

¶ [The suggestion program] is good for the company. I don't think the men get enough money for suggestions. The men will not turn in time-saving suggestions. I have one operator who uses a file on his operation and saves himself some time, but any time a white collar comes around he does the operation without the file.

¶ I get a suggestion once in a while, but the guys are not interested. I know they make the jobs easier, but they don't submit a suggestion. They just use the shortcut themselves, but they don't report it. You can find out when they do that, but usually you don't bother with them. Who's to say what's a fair day's work, anyhow? I think if a man is good enough to meet his time figures and have himself a little extra time, he should keep that extra time.

These attitudes gave rise to many other circumventions ranging from turning a blind eye on certain employee practices to more active intervention. One foreman even admitted to acting as an enforcement agent of informal quota restrictions:

¶ On the whole standards are loose enough so that we can operate within them pretty well. In fact, the men can make more than the standards call for. . . . I've had to tell a couple of them to slow down and get me some quality instead of quantity because they were making too many pieces according to standards.

Even after nearly a year as supervisors, the new foremen reflected no major change in attitude. If anything, their negative opinions appeared to have been reinforced by a number of factors: They felt personally insecure in their new positions, their relations with their superiors did little to counteract their original attitudes and, indeed, were additionally frustrating in the light of what they were taught in their training courses.

As one foreman summed it up:

¶ Well, now, you've got both sides of the picture. You saw me when I was a worker, and now you see me as a foreman. Actually, though, my point of view hasn't changed too much, I don't think. Of course, they do try to change our point of view in these training courses. They tell us all about principles and policies and rules, but it doesn't really mean too much. . . .

Some General Implications

Not all companies, of course, make the mistakes that have been analyzed here—and in fairness to the management at Plant "Y" it should be added that it has since taken some effective remedial steps to raise the level of morale and productivity that prevailed at the time these studies were made.

Nevertheless, "emergency" selection is far from being a rarity in industry, and when it is resorted to, the fundamental importance of insuring that the prospective appointee has a favorable attitude toward his job, his superiors, and the company generally is all too likely to be overlooked.

Negative attitudes that have been years in developing cannot be erased in a couple of training sessions. As a matter of fact, the new foreman who lacks preparation and experience and has lost the mantle of union protection may develop an even more unfavorable opinion of the company, especially if middle management continues to manifest the same behavior that helped foster his negative attitudes as a worker.

Apart from the fact that foremen with a strong dislike for their superiors and for the company cannot be expected to become effective members of management, their attitude may be contagious and spread, as it did at Plant "Y," to other, older members of supervision.

Obviously, there is no easy solution to the problem of picking men who are both capable and have the right "frame of mind" for a supervisory job. Some possible ways suggested by the experience at Plant "Y" are the following:

1. Determine what the supervisor's job really amounts to. What skills and knowledge are required? What experience would be helpful?

2. Develop a program through training (on-the-job as well as other methods) and job rotation to provide candidates with the experience necessary for a supervisory position.

3. Establish a continuing program for evaluating prospective candidates.

4. Make interviews part of the periodic evaluation and the final selection procedure.

5. Officially include the candidate's immediate supervisor in the evaluation program and in the final promotion decision.

6. Encourage informal contacts between higher-level supervisors and prospective candidates long before the need for a promotion decision arises.

Finally, of course, it must be emphasized that all these steps presuppose that the level of employee morale generally is high enough to develop candidates with the positive attitude necessary for satisfactory adjustment in supervisory positions.

AMA ENGINEERING MANAGEMENT FORUM

AMA's Special Conference on Engineering Management, which will feature several papers of interest to personnel executives, will be held Thursday and Friday, April 4-5, at The Statler Hotel, New York City.

...In the annual battle on the nation's campuses, victory does not necessarily go to the highest bidder, nor does the "name" company invariably win out over a less-celebrated competitor. Some helpful insights into how the class of '57 views job offers may be gleaned from the studies reported here.

How College Graduates Evaluate Job Factors

R. E. BARMEIER AND R. J. KELLAR

Sears, Roebuck and Company

AS WE ARE aware, college recruiting has become a big, competitive business. National publications abound in articles telling us that, in the spring of 1956, as against an estimated 500,000 jobs available in government and industry there were only some 350,000 graduates to fill them. The greatest shortages, of course, occurred among engineers and scientists. But there were other shortages, too. Business administration graduates fell almost 20,000 behind the demand. The average company did well last spring if it managed to hire 75 per cent of the college recruits it needed. The typical quota per company was 80 recruits, and some of the larger corporations attempted to fill up to 2,500 openings.

Starting salaries for non-technical graduates averaged last year about $350 per month. But further "additives"—such as premium pay for military experience, reimbursement for college tuition, and other special incentives—increased many of the published starting rates by as much as 25 per cent.

The average company visited about 41 campuses in 1956, and the typical graduating senior had 44 interviews. Experience showed that 100 interviews could be expected to produce 15 likely candidates, of whom seven or eight might ultimately be employed.

It can safely be prophesized that the law of supply and demand will again operate in the spring of 1957. Starting salaries will continue to spiral—averaging around $385 per

NOTE: This article has been adapted from a joint presentation to the Personnel Group at the Annual Convention of the National Retail Dry Goods Association held in New York City last January.

month for non-technical graduates. A recent survey covering 200 major companies shows that about 32 per cent more graduates will be sought this year than last, and that many companies will visit a dozen or so *more* colleges than they visited in 1956.

At Sears—where we comb some 200 colleges and interview hundreds of students yearly—we have become increasingly concerned about the much-publicized apathy of college students toward retailing as a career. Was our experience, we wondered, shared by other industries, such as banking and insurance? Possibly, the very tight supply-and-demand situation for college graduates generally accounted for our difficulties.

In talking with placement directors in colleges throughout the country, we heard, of course, comments about the level of pay in retailing, the hours, and the pressures. But we also found that these same placement directors were equally emphatic about the weaknesses of other industries. In short, after hearing of the problems of other industries, we began to feel that perhaps we were wrong to maintain a consistently dim view about the appeal of our particular field.

Getting the Facts

Instead of relying on impressions, we decided to get some facts. First, we devised a special questionnaire to be administered anonymously to college men who had *rejected* our offer of employment in 1956. This questionnaire was designed to provide us with a rather detailed set of facts about the attitudes of college men toward our company, and toward the field of retailing. To help provide an adequate comparison, we also administered the same questionnaire to men who had *accepted* our offer of employment. At the same time, we made a survey of men who had been with us for some years. In all we polled over 600 men and received nearly 500 replies.

However, we did not confine ourselves to our own facts. We also contacted a number of large corporations in other industries to see whether they had done any research along the same lines. We were pleased to find that a number had, and that the men who had conducted these studies were willing to share their findings with us.

Then came a surprise. We were prepared to find that retailing had problems peculiarly its own, and that college graduates who were interested in being interviewed by a retail concern would probably have a different attitude toward retailing from those who might look to a career in manufacturing or in some other industry. But that was not what we found. With the exception of a few explainable differences between corporations, our findings at Sears and the findings of seven other very large companies in widely different fields were substantially the same.

The recruitment problem, as we now see it, is not one of student apathy toward any particular field. It is an over-all problem—the old law of supply and demand. *No* company, *no* industry today has an easy job in college recruiting. All of us have common problems. Only the *degree* of the problem varies from company to company, from one industry to another.

Now let us get down to cases and take a look at the facts we were able to gather from our own questionnaire and the questionnaires used by companies in other industries. We hoped to get clear-cut answers to our recruiting problems. We hoped we could neatly arrange the results of all the studies into an outline of specific improvements in our college-recruiting efforts. How close did we come to getting a "packaged" answer?

The Composite Findings

First of all, we have learned that there are some things about which we can safely and accurately generalize and others about which we can't generalize. At the outset, however, it should be pointed out that there are two basic phases in a company's recruiting problem. The first is the over-all company policy toward recruitment, such as how many college recruits are needed, what starting salary they are to be paid, and so on.

The second phase of the program is the operational application of the company's recruitment policy—which colleges to visit, how to conduct the interviews, and so forth. Here, we are assuming that the technique of recruitment is effective and are concerned only with policy. But in passing it should be emphasized that the application of policy is no less important than the policy itself.

So far as over-all policy goes, we believe we can be fairly sure of the four or five factors which tend to be *most* important to seniors in selecting a job. We also believe we can identify the four or five factors which tend to be consistently ranked *least* important.

Which factors are *most* important to seniors selecting a job? The composite findings show that college graduates tend to look most often and most carefully at a company in terms of the following five factors:

Type of work—in other words, the nature of the business.
Starting salary.
Opportunity for advancement.
Job location.
Plan for salary increases.

However, the replies to the questionnaires show clearly that you cannot rank these factors in a 1-2-3-4-5 order. The importance of each factor varies with each potential recruit. First, because each man has his own standard of values. Second, because each man can base his evaluation of each factor only upon the degree of his understanding of how they apply to any given company. Thus, companies who have worked in this area have learned that a firm, specific ranking cannot be developed.

Now, at the other end of the scale, here are the factors that normally tend to be at the bottom of the list—again, these are not listed in any particular order of importance:

Company benefits.
Size and prestige of the company.
Job security.
Working conditions.
Hours.

However, it should not be assumed that these five factors are of little importance to a college senior. All we can safely say is that they are less important than the first five mentioned. Let us put it this way. The college recruit *assumes* that a company offers an adequate benefit program, job security, and the rest of it. So he looks instead at what the company offers in starting salary, opportunity for advancement, and so

on. But if he finds out that a company does not offer an adequate benefit program, *then* its absence may adversely influence his decision. The same would be true of the other four "least important" factors listed here.

The Prime Factors

What further light do these studies throw on the "most important" factors mentioned above?

Starting salary. Pay, of course, is a real problem. There have been many articles on pay as a factor in selecting a job. Some have said that it is of primary importance, others have taken the position that it is of no importance at all. In our opinion, the facts indicate that pay is highly important, but not as a factor in itself. It is important only as part of a package of other equally important factors. Students tend to look at a *group* of factors which are most important to them. Thus, a company cannot proceed on the assumption that if it offers the highest salary it will hire the most recruits. If the over-all presentation, or package, is weak in other factors, the company may not do so well even if it does offer good pay. Nevertheless, we firmly believe that even though a company may measure up well in most other respects, if it offers a very low salary, it materially lowers its chances of employing the men in whom it is interested. After all, college seniors are intelligent young men and women. What's more, they become skilled at evaluating companies after their first few interviews. It is only reasonable to expect them to have questions if a company emphasizes its fine opportunities for advancement, and so on, yet fails to offer a reasonable starting salary.

There is, therefore, every reason to avoid offering salaries which are well below those offered in other fields. At the same time, however, there is no reason for companies to feel that they must equal the highest salaries being offered. Obviously, it is most important to know the average rates being offered in the colleges in which recruiting is being done. A company should avoid being too far below these averages. Moreover, it should be willing to match top figures for the men in whom it is particularly interested.

Opportunity for advancement. Opportunity, like pay, is one of the most important factors influencing the student's decision. Every student wants opportunity. But, here again, this is a relative matter. A student tends to compare the opportunities—as he sees them—among the companies he has come in contact with before he graduates. In the end, he decides about opportunity on the basis of evidence. Have other young men like himself, within recent years, made progress in the company which is at least equal to the progress made by comparable men in other industires? That is the question the recruit asks—and answers for himself.

Job location. The emphasis placed by students on job location came to us as something of a surprise. There was a time when people thought that a man who wanted opportunity would seize it wherever it existed. Some of our questionnaires indicate that certain students still feel this way. However, the tendency to pick and choose a particular location is much more marked than it was five or ten years

ago—perhaps because of the younger age at which couples marry, and the substantial number of jobs available. In the questionnaire results from some of the large manufacturing companies, we were particularly surprised to see the substantial percentage of students who regard the city—and even the section of the city—in which they are to work as an important factor in deciding about a company.

Salary increases. The questionnaires gave us some definite clues about this factor. They indicated, first, that graduates want some evidence that performance will be recognized in material terms. Second, while most graduates realize that they will not be fully productive immediately, they do expect that, as their value increases, they will be compensated accordingly. Third, they are highly interested in knowing whether, in future years, the company will afford them the opportunity to earn a respectable income—though views on what constitutes a respectable income vary considerably, of course.

Some General Implications

It should be emphasized that the research in this area that has been carried out by Sears and other companies is relatively fragmentary, and that much more needs to be done. Nevertheless, enough has been learned to indicate that each company must carefully examine its own position and ascertain what impression it makes on the students to whom it has access.

We can also ask ourselves a number of questions. Is our personnel program consistent with the programs offered by companies in other fields of business? Is it consistent with the programs offered by the companies who recruit at the same colleges as we do?

We should also consider what our experience has been with college trainees. Has our turnover been excessive? Have we intelligently developed these men and used their talents? It cannot be too strongly emphasized that recruitment doesn't end until the man is in an executive-level job. Hiring and training him are only the beginning.

Perhaps the most important thing to remember is that today's college student seems to be interested in a combination of factors. Few students are drawn to a company because of its predominance in one factor alone. By examining ourselves, as well as our recruitment sources and pactices, we can perhaps come closer to knowing just what story we should tell as we gird ourselves for the annual battle on the nation's campuses.

. . . The new technology will rely more and more on a higher type of production worker—but where is he to be found? This study indicates that intelligent youngsters of the kind most needed by industry are the very ones who now look askance at "factory work."

Tomorrow's Production Worker: Is Industry Missing Its Best Bets?

JOHN W. PARSONS and ROBERT F. PECK*

THE TWO YOUNG GIRLS, who identified themselves as eighth-grade pupils, had phoned the Employee Relations Director to ask for an interview. They wanted, they said, to talk about "labor problems." At the appointed time, they showed up, in their freshly starched dresses, armed with pencils and pads. After the proper introductions had been made, they explained that they wanted to discuss "labor troubles." By "labor troubles," they said, they meant strikes, picket lines with fights to keep people out of the plants, overturned cars—the kind of things they had seen in the headlines. They showed marked signs of disappointment when the Employee Relations Director had to explain that, in its 50 years of operation, the company had had only one strike—and that had taken place without any violence at all.

To get the interview started again, the Employee Relations Director asked the girls what they thought a factory was like. Said the spokesman for the two:

¶ A factory is usually located in the poor part of town. It's dirty, smoky, and not a very nice place.

¶ What about the inside?

¶ It's dirty, crowded, and not very well lighted.

¶ What about the people? Are they happy with their work?

¶ No.

Such were these two youngsters' impressions of factory life. Yet, had they been asked, "What country has created the greatest production facilities and the greatest standard of living the world has ever known?" there is little doubt that they would have chorused with pride, "The United States of America."

Does this picture of the modern American factory represent the beliefs of most of our youngsters today? If so, industry has not only a public relations problem on its hands, but a

* Mr. Parsons is Director of Employee Relations, the McGill Manufacturing Company, Inc., Valparaiso, Indiana. Dr. Peck is on the faculty of the Department of Educational Psychology, University of Texas.

personnel problem, too. Our increasingly complex technology needs the brightest, most conscientious young people it can get to man the factories and master the skills on which our industrial economy is based. Yet, if these girls' views are typical, it follows that few young people will voluntarily choose industrial careers, or will want to prepare themselves for factory work. Instead of getting able, responsible people, industry bids fair to become the refuge of the misfits, the ne'er-do-wells, and those who turn to factory work as a last resort.

Obviously, one cannot generalize from the comments of a couple of school children. These two little girls might well have come from comfortable homes where actual factory conditions were unknown to anyone in the family and where "factory work" was looked upon as "low." To test how far their views were typical, a small-scale experiment was carried out. A group of 26 junior and senior boys in the high school "shop" class was invited to tour two local plants. To eliminate the possibility of family bias, the boys selected were mostly from working class homes, who were taking an industrial arts curriculum in school. Few, if any, of them were likely to go to college.

Of the two plants, one produced electrical switches, lamp guards, and the like; the other made precision roller bearings. At the start of the tour, the boys assembled in the company conference room, where the respective plant managers gave them a short sketch of the history and development of the two industries and showed samples of the factories' products. Thereafter, the class was divided into groups of three boys apiece. Each group toured the two plants with a long-service production employee as a guide. They started at the incoming materials department and followed the manufacturing process right through to final assembly and shipping.

The Boys' Impressions

After the boys returned to school, they were asked to write a page or so, giving their personal impressions of the plants. The accounts they wrote provide some interesting insights into their previous conceptions of factory life, and what impressed—and, in many cases surprised—them about the actual factories they had seen. Since they were not told what aspects they should discuss, their choice of topics appears to be a good index both of their preconceived ideas about factories, and of their personal scale of values as regards the important things to look for in a job. The attitudes thus revealed may be enlightening to industrial management.

As might be expected, many of the boys mentioned how impressed they had been by an expensive machine or some intricate manufacturing process. Many commented favorably also on the precision of the work, the way it was organized, and the number of different products that were turned out. Seventeen of the 26 specifically expressed appreciation, often with some astonishment, at the clear, courteous, and friendly way their questions had been answerd by the workers they had talked to during the tour. (As one boy said, "Everybody, *even the workmen*, treated us good and answered our questions the best they could.")

Such responses indicate a positive interest in machinery and in production work. They also show that it was important to these boys for them to have their ideas and questions respected, and to be treated in a friendly, adult way. So far, there are no particular surprises in their reactions.

Some Eye-Openers

Two other kinds of comments were made, however, which might prove something of an eye-opener to both managers and men in many industrial plants. One set of responses revolved around the boys' observations about the attitude of production workers and the caliber of their performance. Twenty-one of the boys were impressed, often to the point of surprise, to find factory employees doing a conscientious job, and showing pride in their work. Among typical comments along these lines were:

¶ All the employees were hard at work, not yelling at some one at the other end of the room as one may think that goes on in a factory of this kind.

¶ Everybody seemed to be doing their own work and nobody was loafing.

¶ The way the men went about their work and the interest they took in it surprised me, for I had always thought that when you worked in a factory you just went and sat at a machine all day without ever knowing what the piece you were making was used for. The men acted like they cared what they were doing and like they wanted each piece to be better than the one before.

¶ I was impressed by the way everyone minded their job and practically forgot there was anyone else around him.

¶ I was very much impressed with how everyone kept quiet and done what they were supposed to.

¶ I liked the assembly room very much for the way it worked in order and together.

¶ But the thing I liked best was the way the employees went about their work without talking and complaining about their work.

One ungrammatical slip of the pen was a crowning tribute to this boy's recognition that products are made by *people* using machines, not by the machines themselves:

¶ This is a well constructed factory. From the top man down.

In almost all the reports, the same theme occurs: the boys didn't expect factory employees to care about their work, or to do it with conscientious effort. They were surprised to find how different, in reality, a factory was. These boys would probably take it for granted that a doctor, a business man, a teacher, or a farmer would go about *his* work with serious intent, It reversed their preconceptions, however, to find *factory workers* showing purposeful, interested attention to their jobs.

Need it be added that the very fact of their having spontaneously picked out this theme shows that these boys *put a high personal value on doing a conscientious,, interested job?* Some of them, it is true, unwittingly revealed a tendency to socialize rather than work, part of the time; but even these showed respect for men who stick to their jobs.

This sample—these quite ordinary American boys have, it appears, a marked respect for good workmanship, and they want jobs that enable them to take personal pride in what they do. Before their actual trip through a factory, however, they did not believe that factory work offered any incentive of this kind.

The other aspect of factory life which came as a pleasant surprise to

these youths was the physical condition of the plant. It was clear from their comments that most of them had thought of factories as dirty, noisy, dark places where men were herded together. Twenty-two of the boys made comments like the following:

¶ I thought a factory was dark and dirty. But when I went through your plant I changed my mind. I think you have a very nice plant, very well lighted and real clean.

¶ This machine room was so clean that you may think it was the first day of use.

¶ I like to know something about each machine, the cleanliness and workmanship done. I believe these things are the most important of all.

¶ The inside of the plant looked very clean and not at all like I thought it would.

¶ I wouldn't have believed that any factory could be as clean and as neatly organized as what I saw.

¶ I also would like to commend you on the way the plant seemed to have a wholesome clean feeling about it, where cleanliness was stressed in the proper manner.

¶ I was impressed by the whole setup of the shop and how the machines were placed so that each man had plenty of working room. Nobody seemed to be in anyone else's way. It was surprising to see the cleanliness of the place for as much as was being done.

¶ One of the things that impressed me most was how clean it was everywhere I went. I guess it pays in any business to keep the working order a clean place to work.

¶ I thought it was clean, well-lighted, well-ventilated, and most of all there was enough room in which to work in.

To these boys, cleanliness is obviously a prime virtue. What is more, many of them explicitly associate it with good, orderly workmanship. Undoubtedly, most factory managers would like to have employees with just such attitudes. But unfortunately, as the comments show, it is just such boys as these who do not expect to find cleanliness, adequate light, or adequate work-room in "the average factory." The conclusion seems obvious that the most serious-minded, responsible youths are likely to look for almost any kind of job *except* a factory job.

One small sample is no measure of young people's attitudes across the country. Nevertheless from the writers' experience in personnel interviewing and personnel assessment, it seems that these highly unfavorable ideas of "a factory," and of factory workers, are widely held by young people today. This is by no means the viewpoint only of the sons and daughters of families of higher social standing. Some of the boys in this particular sample, for instance, had parents or other relatives working in the plants visited. Yet the boys' conceptions of what the plant was like bore little relation to what they discovered when they were inside it.

The White-Collar Myth

These misconceptions seem to spring from an old, widespread myth—that *only* in white-collar jobs can one find cleanliness, respectability, *and conscientious, responsible-minded workers.* Children absorb this idea, it would seem, from the inaccurate, but nevertheless powerful impression of the nature of industrial work which permeates our entire culture. Insofar as this picture is untrue of the modern industrial plant—and certainly, the plants the boys visited are by no means exceptional—it seems that there is a large and important job still waiting to be done by industry: To

get an honest, accurate picture of factory life across to the public and particularly to the young people from whose ranks the production workers of tomorrow must be drawn.

Our entire society is becoming more, not less, dependent upon an increasingly complex technology, and on increasingly intelligent, responsible production workers. A steadily growing precision and care in manufacture are essential, if all our automotive, electronic, chemical, and other highly intricate inventions are not to break down in service. Consequently, it is even more important today than it was a generation ago to attract responsible, hard-working young people into production careers.

More Able Workers Are Needed

What is more, as every industrial manager knows, the need today is for more and more young workers who possess the talent, character, and ambition to grow into the foremen, the superintendents, and the production executives of the future. In most industries, it is not only desirable but a matter of practical necessity to draw future management men from the ranks—experienced workmen who not only know the product and its manufacturing process but are also familiar with the ways of production workers. Some areas of management can safely be staffed by "outsiders." But few men can either function or win respect as production managers, without a firsthand knowledge of the particular production process involved.

Yet, if able and ambitious young men look askance at factory life, how can industry expect them to prepare for factory careers, or even to apply for a factory job except as a last resort? If this "dirty, crowded, lazy" idea continues to prevail among the younger generation, where is industry going to find an adequate supply of future managers?

This is not a matter of concern for one or two industries alone. Without skilled, conscientious workers and leaders manning our production operations, America, within a generation, may well present the picture of a push-button world where the buttons don't work. There is great and well-founded concern, at present, about our serious shortage of scientists and engineers. The possibility that we may lose our position of world leadership in the technology on which our kind of society depends is all too real. Yet, unless responsible, skilled men manufacture the products which our scientists and engineers invent, the technicians might as well stop inventing.

Americans in all walks of life are proud—and with reason—of our high standard of living; but if they persist in the view that the production of the things that go to make up this high standard is "not for them," how is the standard to be maintained?

The emphasis which our educational traditions place on intellectual training has tended to support the tacit assumption that only a college education is worthy of respect—that manual skill is for the duller clods or the more irresponsible members of our society. This notion did not originate among teachers, nor are they the most influential advocates of this unwitting insult to industrial craftsmanship. It is the lawyer, the preacher, the banker, the merchant, the industrial executive himself, who all too

often makes it clear that he looks upon the factory as a human "dumping ground," and not at all the kind of place where "my son is going to work."

While the authors' experience, coupled with the evidence of this small-scale study, points to the existence of the problem, little is known about either its extent or its underlying causes. Beyond the obvious practical steps which any one industrial manager can take, a large-scale study would seem to be called for. Only a well-designed survey of a cross-section of American youth *and adults* can determine how far unfavorable attitudes toward industrial work actually prevail and what can be done to counteract them.

Are You Getting Through to Your Employees?

A RECENT Opinion Research Corporation survey of 100 large companies indicates that, during the past 10 years, the percentage of companies using various communication media increased as follows: employee publications, 57 per cent in 1947 and 80 per cent now; letters, 28 per cent in 1947 and 82 per cent now; movies, 48 per cent in 1950 and 81 per cent now; institutional advertising, 56 per cent in 1949 and 72 per cent now; supervisory meetings, 70 per cent in 1951 and 95 per cent now.

However, Opinion Research also reports that two out of three editors said that top management has never spelled out their publications' objectives. About 50 per cent of these editors said they didn't get management's active cooperation, and 44 per cent said they could not get to officers when they needed information.

While counting on employee communications for more and more solid help, Opinion Research says, management still talks largely in terms of its own interests, not in terms of employee interests. When selling its products, the company stresses consumer benefit, but when merchandising its ideas—automation, job evaluation, a new pension plan—more frequently than not it assumes that the employee's gain is self-evident.

THE PERSONNEL BOOKSHELF

THE PRACTICE OF UNIONISM: ***An Inside Picture of Labor Unions Today.*** By Jack Barbash. Harper & Brothers, New York, 1956. 464 pages. $5.00.

Reviewed by Lawrence Stessin*

Now that the trend is toward long-term labor agreements, executives might use this respite from the guaranteed annual tussle at the bargaining table to catch up on their reading. And they could make no better use of their time than to settle down comfortably with *The Practice of Unionism*, one of the most informative books on labor relations in many a publishing moon.

Mr. Barbash is an old hand at the typewriter and what he writes about labor has feeling, knowledge, and authority. Although *The Practice of Unionism* is decidedly partisan, its value to management is just that. With the agility of a soapbox orator (the comment is not meant to be derogatory since this reviewer has high respect for the soapbox as a communications medium—it is unfortunate that it has been strangled by the teleprompter), the author has rationalized the union position on almost every item in the industrial relations work kit.

The union security clause? Far from being a controversial issue involving the "right to work," this is merely a protection against the "free rider" or the "chiseler" who wants the benefits of unionism without helping to carry the freight. Seniority? No damper on initiative, this, no barrier to business flexibility, but one of the worker's legitimate equities in his job. Featherbedding? Mentioned only once—in the bibliography at the end of the book. Racketeering? It would not exist, if there were no crooked employers. And so on right down the line. The reasoning behind these union concepts is of long standing and those who have dealt with labor will not find any change in attitudes here. But this is the first time that the union "how" and—more important—"why" has been so well presented, so carefully codified, and so persuasively argued.

As a bargaining tool, this book is invaluable—it will save countless hours of research. The labor relations man who believes in anticipating demands and coming into sessions with something more in the way of preparation than a lusty "No" can use it as ammunition. It will provide him with insights on how union leaders think and what their approaches are to all the vital issues that make up a collective-bargaining agreement. Of no small help is the excellent index, complete and informative, which so many books written by labor leaders lack. And for the reader who wants to add to his diet of bread-and-butter unionism, the author has supplied an intelligently selective bibliography with a helpful commentary.

Despite the partisan tone of the book, it contains one piece of union philosophy which will provoke no argument from employees:

* Professor of Management, New York University.

> As to what is *not* the goal of collective bargaining, the usurpation of management prerogatives in any wholesale sense has no attraction for the union as an end in itself. Management prerogatives are of concern only in special context and then not as management prerogatives per se, but as they appear to impinge on wages, hours and working conditions. The area over which the union feels it is necessary to exercise some control varies with each situation but it is interested in collective bargaining objectives, not in taking over management.

Management people who are oriented toward bargaining will find the chapter on "The Union in the Collective Bargaining Process" of special interest since it is here that the author discusses union strategy. Somewhat surprising is his comment that union bargainers do not always come to the table with specific demands in mind. "More typically," he says, "the union's strategy is likely to be nothing more complicated than 'let's see what the employer has to offer and we'll start from there'."

The strategies used by John L. Lewis and Walter Reuther, as reported by Mr. Barbash, are most illuminating; indeed management might take a cue from these masters of the give-and-take. "Sometimes union's tactics are to play it close to the chest and let management do all the talking," Mr. Barbash observes. "A coal operator who has faced John L. Lewis across the bargaining table says: 'Lewis' greatest ability is to sit still. While everyone clunks and frets he sits there inscrutably and rides out the storm'."

Or take Walter Reuther's comments on the fine art of negotiation:

> The art of collective bargaining is truly the art of timing and maneuvering. You have to know when to move. By maneuver I don't mean compromise. I mean the ability always to leave yourself elbow room. At the point that you're rigidly locked, everyone is in trouble. In a sense that's the problem of the cold war—too many rigid positions.

As an illustration of this technique, Mr. Barbash describes how Reuther outmaneuvered General Motors and Ford in the historic negotiations leading to the guaranteed annual wage contract. There are fascinating sidelights such as this throughout the book. It could have been written only by one who sits with the mighty in the American labor movement.

THE UNIVERSAL PLAN OF JOB EVALUATION — INSTALLATION MANUAL. By P. A. Belanger. Published by the author, P.O. Box 63, York, Penna., 1956. $10.00.

Reviewed by Elizabeth Lanham*

This *Installation Manual* comprises two major sections: The first, a presentation of a point rating plan which the author calls a "Universal Scale" designed to rate both shop and office jobs; the second, a discussion of merit rating. Since a background of information in both areas is assumed, the manual should be of use primarily to experienced personnel rather than beginners.

The section on job evaluation begins with the statement that almost anything can be measured, including jobs which range from the simplest and most routine type to top management jobs. It continues with the thought that, although many plans exist for measuring jobs, there is no single, simplified plan applicable to any type of business establishment and to any division of a business. *The Universal Plan of Job Evaluation* is designed to fill this need.

* Associate Professor of Management, The University of Texas.

The technique of job evaluation and the purposes it serves are explained briefly. After outlining the principles and methods of the universal plan, the author explains the mathematical basis for assigning point values to the respective factors and their degrees and how this method of assigning point values makes it possible to evaluate office and shop jobs in their proper relationship through the use of the universal scale.

Following some brief comments on job descriptions, job analysis, over-all job evaluation procedure, and classification of employees, the universal rating scale is presented in the usual format showing each factor, its definition, its degrees, and the point values assigned to the degrees.

Six factors are designed to measure both shop and office jobs, five are specified for shop jobs only, and another five for office jobs. The result is a separate factor scale for the measurement of various areas in each job group as well as a partial scale common to both groups. All the factors, however, are linked mathematically since their first degree values are weighted in terms of the usual 100 per cent employed in many point scales, and this mathematical linkage makes it possible for shop and office jobs to be evaluated in relationship to one another. It is in this respect that the plan is unique.

The second section of the manual includes a definition of merit rating, a brief discussion of when to rate and what procedures to follow, and various forms such as rating sheets with factors for rating employees and forms for reporting ratings. The author makes the point that the use of merit rating and job evaluation in combination can effect greater harmony and lower costs.

In the field of job evaluation, it is the consensus of opinion that the best results are secured when each organization designs its own plan to fit its particular needs. Even professional and trade associations which have set up plans for their own membership usually recommend that the plans be adopted specifically to the user's needs. The number and choice of factors and their definitions, the number and gradation of degrees of the factors, the point values of degrees weighted in terms of the value of the factors in specific jobs—all these are items which should be tailor-made for the company in question. It is even argued that each distinct category of jobs within an organization may require an individualized rating scale.

Although the author proposes his scale for universal use, its real value in this reviewer's opinion, lies rather in serving as a guide to organizations in designing their own plans. Like any other good point-rating scale, it is useful as a reference, providing examples and stimulating ideas.

The merit-rating plan likewise is valuable primarily as an aid to trained personnel in designing their own employee rating scales and forms.

Both plans are well conceived, and the manual as a whole may be recommended as a reference for experienced practitioners in these areas.

FADS AND FOIBLES IN MODERN SOCIOLOGY AND RELATED SCIENCES. By Pitirim A. Sorokin. Henry Regnery Company, Chicago, Ill., 1956. 365 pages. $10.00.

*Reviewed by Leonard R. Sayles**

Professor Sorokin of the Sociology Department of Harvard University has written an angry and vitriolic book. His intentions—and he manages to live

* Associate Professor, Graduate School of Business, Columbia University.

up to them—are clearly stated in the preface:

> The purpose of these essays is to expose the nonscientific and half-scientific elements in modern sociology and related disciplines. This operation is painful for the surgeon as well as for those who sincerely err in accepting sham-truth for verity. But, in spite of its painfulness, such an operation must be performed now and then to clear away the non-scientific parasites which, otherwise, progressively undermine the creative growth of these disciplines and their service to the society which supports them.

In a sense, this book is an academic version of the magazine *Confidential* and has therefore all the advantages and disadvantages of the exposé. But perhaps only this type of sweeping denunciation—unguarded and sometimes excessive, with some of the same faults as the works it attacks—can drive home the point that contemporary social science is somewhat more sure of itself than it deserves to be.

The author's criticism may be summarized as follows:

1. Many of the so-called findings of social science research are truths known to the great philosophers, religious leaders, and writers of antiquity. Hence its claims to originality are shams—mere delusions of grandeur.

2. Social scientists have developed relatively closed cliques which they sustain, in part at least, by citing one another's accomplishments in research reports and excluding the research of non-members. At times this is carried so far that the work of predecessors is utterly ignored and exaggerated claims of originality are made for members of the clique.

3. The results of research are often petty and inconsequential. As evidence of wasted effort, Professor Sorokin cites numerous "findings" that are platitudes and merely prove the obvious—for example, that people join groups because groups help them attain their goals.

4. The effort to mimic the physical sciences (faddism) results in impractical and often inaccurate applications of quantitative methods, particularly mathematics, and the development of a mumbo-jumbo vocabulary—*valence* instead of *attraction*, for example; *locomotion* for *change* or *transformation*; *social atom* for *individual*.

5. Despite its efforts to imitate the experimental sciences, the social science research of recent decades for the most part lacks an adequate scientific basis.

Let us look at each of these points. The first two, in this reviewer's opinion, are least important. The mere fact that references to human behavior can be found in the works of earlier writers is not an indictment of modern social science. Observers have always had something to say about human behavior, and usually on *both* sides of the question. What is new in present-day research is the attempt to determine the specific conditions under which one type of behavior emerges rather than another.

As for cliques, or "schools," the social sciences are not the only offenders. This type of "division of labor" is common to all the disciplines today and, indeed, seems to be inevitable in the complex world of science and affairs that we have evolved. It is true, of course, that the best members of each clique wear the smallest blinders—Sorokin himself, for example.

The remaining criticisms are of somewhat graver concern. The layman may well beware of the tendency among social scientists to upgrade their findings, however insignificant, by erudition of language or obscurity of exposition. And statistics alone, certainly, do not guarantee validity; in fact, quantifica-

tion often accomplishes less than if the researchers had *thought through* their material instead of measuring it. As Professor Sorokin observes:

> In the raging epidemics of quantophrenia everyone can be a "researcher" and a "scientific investigator," because everyone can take a few sheets of paper, fill them with all sorts of questions, mail the questionnaires to all possible respondents, receive the answered copies, classify them in this or that way, process them through a tabulating machine, arrange the results into several tables (with all the mechanically computed percentages, coefficients of correlation, Chi-Square indices, standard deviations and probable errors), and then write a paper or a book filled with the most impressive array of tables, formulae, indices, and other evidence of an "objective, thorough, precise, quantitative" research. These are typical "rites" in "contemporary quantitative research" in sociology, psychology, and other psychosocial sciences. They can be "officiated" over mechanically by a rank and file slightly drilled in the performance of these "rites." Hence, the rising tide of quantophrenic studies in these disciplines.

In condemning "quantophrenic" studies, the author heaps most of his scorn on survey methods (attitude scales and opinion polling, for instance) and testing, particularly personality and intelligence tests. For good measure, he also berates the "group dynamics" school and their associates, the "small-group" experts. His major point is that, in assessing human behavior, particularly through surveys and tests, excessive weight is placed on purely verbal reactions to unrealistic and naive questions.

Though Professor Sorokin fails to suggest any alternative approaches (by implication, he favors historical methods of analysis), many of the criticisms he advances can be met by the type of research that stresses systematic observation of ongoing institutions and groups. We come back to this point, it seems: that *observation of human behavior* (which has always been stressed by anthropologists, as their partisans would argue) is the obvious antidote to the questionnaire or to the "experimental laboratory" artificially constructed from groups of college freshmen.

No brief review of this book can properly assess the variety of ammunition that the author brings to bear upon his target. But the book can be enthusiastically recommended to all who are concerned with social science because it raises questions that cannot be ignored—some of which, to be sure, have been raised before but less provocatively. Certainly any "practitioner" (a term used by the social scientists to designate the non-social-scientist who is supposed to make use of their findings) should familiarize himself with the general outlines of this critique before relying upon research findings to guide administrative decisions.

While some sections of the book may be hard going for the layman, its major argument is unequivocally clear and an intensive reading will be rewarding for all those who enjoy hearing someone call a spade (or what he is convinced is a spade) the instrument that it is.

Professor Sorokin brings to what is obviously a labor of love an outstanding reputation as a scholar, a wealth of learning, and his own unique personal contributions to the fields surveyed.

Briefer Book Notes

[Please order books directly from publishers]

LABOR ECONOMICS AND PROBLEMS AT MID-CENTURY. By Sidney C. Sufrin and Robert C. Sedgwick. Alfred A. Knopf, Inc., New York, 1956. 385 pages. $5.75. In this introductory textbook, the authors take the pragmatic approach to labor problems, focusing on current issues and their solutions, and emphasizing the role of non-economic factors in economic decisions.

EDUCATION AND HUMAN MOTIVATION. By H. Harry Giles. Philosophical Library, Inc., New York, 1957. 108 pages. $3.00. The aim of this monograph is to outline an integrative theory of behavior to serve as a guide for research and social action in the field of human relations. In developing his thesis, the author discusses such problems as the biological and psychological concepts of growth, the individual's limitations and potentialities for growth, and the relationship of individual growth to social controls in a democratic society.

WORK SAMPLING. By Ralph M. Barnes. Wm. C. Brown Company, 215 W. 9th Street, Dubuque, Iowa. 1956. 264 pages. $5.75. A practical guide to work sampling methods intended for managers and industrial engineers as well as students. In addition to a history of work sampling and an analysis of the fundamental statistical concepts employed, the manual includes a number of case studies contributed by various authorities in the field, some of which have not been previously published.

ELEMENTS OF SUPERVISION. By William R. Spriegel *et al.* John Wiley & Sons, Inc., New York, 1957. 349 pages. $6.00. This second edition represents an extensive revision of the original text and includes seven new chapters on such important phases of supervision as interviewing, mental health, cost and materials control, and motion and time study. There is also a new appendix on statistical quality control.

INDUSTRIAL ENGINEERING HANDBOOK. Edited by H. B. Maynard. McGraw-Hill Book Company, Inc., New York, 1956. 331 pages. $17.50. A compilation of articles by specialists covering the following topics: the industrial engineering function, methods, work measurement, predetermined elemental time standards, wage payment, control procedures, plant facilities and design, and recent developments such as automation and linear programming. Though mainly technical in content, the handbook gives considerable attention to the human relations aspects of industrial engineering.

THE MANPOWER MANAGEMENT FIVE-FOOT SHELF. Compiled by Herbert G. Heneman, Jr. *et al.* Bulletin No. 19, Industrial Relations Center, University of Minnesota, Minneapolis, Minn., 1956. 29 pages. $1.00. This revised and expanded edition of the *Industrial Relations Five-Foot Shelf*, originally published in 1947 as Bulletin No. 5 of the Industrial Relations Center, presents an annotated bibliography of books and magazine articles in personnel and labor relations. Designed to provide a "minimum library" for professional workers in this field, the bibliography is organized around the principal functions of industrial relations staff members as reported in the Center's annual surveys and includes a check list of periodicals which specialize in articles dealing with each of these functional areas.

PSYCHOLOGY: *General, Industrial, Social.* By John Munro Fraser. Philosophical Library, Inc., New York, 1956. 310 pages. $7.50. An introduction to psychology written from the manager's point of view. Addressed primarily to students, the book focuses on the major issues in each area rather than details and stresses the applications of psychology to the human problems of industry and the management of social groups.

PRINCIPLES AND PROBLEMS OF EXECUTIVE LEADERSHIP: *Guides to Executive Action.* By Joseph L. Krieger. Universal Printers, Arlington, Va. For sale through the George Washington University Book Store, Washington 6, D.C. 1956. 188 pages. $7.50. This study reports the consensus as determined from the responses given to a check-list questionnaire, among 110 top line and staff executives in industry, government, and the universities on such questions as the nature of the executive job, the motivation and personal characteristics of the executive, the criteria for executive performance, the techniques of executive selection and development, and the differences between executive development in industry and in government.

LEADERSHIP AND ROLE EXPECTATIONS. By Ralph M. Stogdill *et al.* Research Monograph No. 86, Bureau of Business Research, The Ohio State University, Columbus 10, Ohio, 1956. 158 pages. $2.00. This monograph explores the relationship between expectation and performance in the leadership role among 183 military and civilian administrators in a large research organization. Defining role performance in terms of what the leader is seen to be doing and role expectation in terms of what the leader or his followers think he ought to be doing, the study relates the discrepancies between expectations and performance to leader behavior and status factors. Its findings should be of interest to personnel administrators and others concerned with the superior-subordinate relationship in organized groups.

WHAT DO YOU KNOW ABOUT LABOR? By James Myers and Harry W. Laidler. The John Day Company, Inc., 210 Madison Avenue, New York, N.Y. 1956. 301 pages. $4.75. A popular account of the background of the American labor movement and the major issues of the present day including "right-to-work" laws, strikes and how to prevent them, the guaranteed annual wage, union welfare funds, civil liberties, and the AFL-CIO merger. A selective bibliography, a list of agencies dealing with labor and economics, and a directory of trade unions are also included.

WORK AND ITS DISCONTENTS: *The Cult of Efficiency in America.* By Daniel Bell. Beacon Press, Boston, Mass., 1956. 56 pages. $1.25. In this essay, a collection of informal "notes" or reflections on the nature of work in present-day society, the author considers such questions as the different meanings of efficiency and rationality, motivations for work, the "revolt against work," the role of play, and the various "solutions" proposed for the discontents of the modern worker.

EMPLOYEE INTEREST IN COMPANY SUCCESS. By John W. Riegel. Bureau of Industrial Relations, University of Michigan, Ann Arbor, Mich., 1956. 302 pages. $6.00. An investigation of the mutual interests of employers and employees in the industrial enterprise. Based on a survey of eight manufacturing companies in highly competitive industries and on interviews with company executives, first-line supervisors, employees, and union leaders, the report deals with the reasons for employee interest in company success, how employee interest can benefit a company, and the ways in which this interest can be encouraged and sustained by management.

Publications Received

[Please order directly from publishers]

PRODUCTIVITY MEASUREMENT: ***Plant Level Measurements, Methods and Results.*** Prepared by Jean Carrie. European Productivity Agency, Organisation for European Economic Co-operation, 2000 P Street, N.W., Washington 6, D.C. 1956. Volume II. 196 pages. $1.50.

LABOR MARKET BEHAVIOR IN SMALL TOWNS. By Irvin Sobel and Richard C. Wilcock. Institute of Labor and Industrial Relations, 704 South Sixth Street, Champaign, Ill. 1956. Reprint Series No. 41. 24 pages. Gratis.

FORD'S BARGAINING POSITION. By Karlton W. Pierce. Research Division, California Personnel Management Association, 2180 Milvia Street, Berkeley 4, Calif. 1956. 8 pages. $1.00.

CAREER: ***The Annual Guide to Business Opportunities.*** Edited by William H. Ottley. Careers Incorporated, 15 West 45th Street, New York 36, N.Y. 1957. 256 pages. $3.95 (cloth), $1.95 (paper).

GUIDING PRINCIPLES OF MEDICAL EXAMINATIONS IN INDUSTRY. The Council on Industrial Health, American Medical Association, 535 North Dearborn Street, Chicago 10, Ill. 1956. 11 pages. Gratis.

IMPROVING EMPLOYMENT REFERENCE CHECKS: ***Guides for the construction and use of mail reference questionnaires (vouchers) to obtain employment information on job applicants.*** By Eva Russell Stunkel *et al.* U. S. Government Printing Office, Washington 25, D. C. 1956. 85 pages. 45 cents.

OLDER WORKERS UNDER COLLECTIVE BARGAINING: ***Part I—Hiring, Retention, Job Termination.*** Bureau of Labor Statistics, United States Department of Labor. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1956. 30 pages. 25 cents.

INTELLECTUALS IN LABOR UNIONS: ***Organizational Pressures on Professional Roles.*** By Harold L. Wilensky. The Free Press, Glencoe, Ill. 1956. 336 pages. $6.00.

EXPLANATION OF SOCIAL SECURITY LAW AS AMENDED IN 1956. Commerce Clearing House, Inc., New York 36, N.Y. 1956. 144 pages. $2.00.

INTERNATIONAL ORGANIZATIONS IN THE SOCIAL SCIENCES: ***A Summary Description of the Structure and Activities of Non-Governmental Organizations in Consultative Relationships with UNESCO and Specialized in the Social Sciences.*** Columbia University Press, 2960 Broadway, New York 27, N. Y. 1956. 100 pages. 50 cents.

THE UNIONIZATION OF THE AMERICAN STEEL INDUSTRY. By Walter Galenson. Institute of Industrial Relations, 201 California Hall, University of California, Berkeley 4, Calif. 1956. 34 pages. 20 cents.

APPRAISING AND INTEGRATING EMPLOYEE BENEFITS. By Robert D. Gray. Industrial Relations Section, California Institute of Technology, Pasadena, Calif. 1956. 24 pages. $1.00.

ALTERNATIVE APPROACHES TO SUPPLEMENTAL UNEMPLOYMENT BENEFITS. By Michael T. Wermel. Industrial Relations Section, California Institute of Technology, Pasadena, Calif. 1956. 30 pages. $1.00.

WHAT YOU SHOULD KNOW ABOUT THE MILITARY RESERVE: ***Helpful Facts for Employer and Employee.*** Commerce Clearing House, Inc., 214 North Michigan Avenue, Chicago 1, Ill. 1956. 64 pages. $1.00.

LABOR EDUCATION: ***A study report on needs, programs and approaches.*** By Joseph Mire. Inter-University Labor Education Committee, Box 2215, Madison 5, Wis. 1956. 206 pages. Gratis.

From the AMA Management Bookshelf:

A COMPANY GUIDE TO THE SELECTION OF SALESMEN

Who is the ideal salesman? How do you *find* him? How do you *select* him? This report gives the answers, based on the practice and research of 180 companies. Here are facsimiles of actual forms—adaptable to special needs—that will help build a top-flight sales force: personal history forms, interviewer's guides and records, job descriptions, rating sheets, etc. RESEARCH REPORT 24. *$4.75 (AMA members: $3.50)*

Two recent publications in the AMA Personnel Series:

PERSONNEL PRACTICE AND POLICY: THE CHANGING PICTURE

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